

The Dawn of European Civilization

By
V. GORDON CHILDE

D.Litt., D.Sc.

Professor of Prehistoric European Archaeology, University of London

LONDON
ROUTLEDGE & KEGAN PAUL LTD
BROADWAY HOUSE: 68-74 CARTER LANE, E.C.4

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PREFACE

THE material basis and spiritual context of modern life are the cumulative result of the achievements and discoveries of the past. Europeans share with the Chinese and even with the aborigines of Australia a part of this cultural heritage. With the genesis of that common substratum however we are not here immediately concerned ; it has been described by M. de Morgan in an earlier volume in this series. My theme is the foundation of European Civilization as a peculiar and individual manifestation of the human spirit.

But on this topic sharply opposed views are current. One school maintains that Western Civilization only began in historic times after 1000 B.C. in a little corner of the Mediterranean and that its true prehistory is to be found not in Europe but in the Ancient East. On the other hand, some of my colleagues would discover the origin of all the higher elements in human culture in Europe itself. I can subscribe to neither of these extreme views ; the truth seems to me to lie between them. In such a field it would of course be presumptuous to pretend to have attained a final synthesis. I can but present in all due humility the results of an earnest attempt to survey all the facts as a whole.

The Occident was, I would submit, indebted to the Orient for the rudiments of the arts and crafts that initiated man's emancipation from bondage to his environment and for the foundation of those spiritual ties that co-ordinate human endeavours. But the peoples of the West were not slavish imitators ; they adapted the gifts of the East and united the contributions made by Africa and Asia into a new and organic whole capable of developing on its own original lines. By the sixteenth century B.C. the new organism was already functioning and the point had arrived when the Westerners were ready to assume the rôle of masters. Among the Early Bronze Age peoples of the Ægean, the Danube valley, Scandinavia, and Britain, we can recognize already the expression of those very qualities of energy, independence, and inventiveness which distinguish the Western world from Egypt, India, or China. But this does not justify the contention that the

mutual rôles of the Ancient East and the modern West, as they existed at the dawn of history, had been mysteriously reversed in a more remote antiquity.

My task is then to exhibit the creation out of the cultural capital common to many lands of the new force, the growth of which has ultimately transformed the face of the world. Since the germs of the new are evidently active in the Middle Bronze Age that period puts a natural term to the inquiry. But the existence of such divergent schools of thought necessitates a careful study of the evidence.

The Orientalists indeed treat the humble productions of early man in Europe with a certain contempt and have relied largely on *a priori* theories. But their opponents have lavished a loving care on the rude artefacts of our forerunners and by patient research have built up a powerful case in support of their thesis which cannot be demolished by a few generalizations. The material itself must be examined and the reader must judge which view allows of its co-ordination into the most logical and coherent whole. To that end the Continent has been divided into several provinces, the spatial relations of which at different epochs are illustrated by four maps. Within these provinces the sequence of observed phenomena is well known; disputes begin with the interrelation of the groups. Here I have tried to set forth the material objectively in its proper order and to expound the several views of competent authorities upon its interpretation.

But it must be remembered that our material is only the skeleton of an organism which once was clothed with flesh and which still is immanent in every moment of our lives. The Continent which is so neatly mapped for us is itself a heritage from prehistoric times. Peasants with stone hoes and axes opened up its valleys to cultivation; hunters and herdsmen blazed the trail through the primeval forests; mariners in dug-out canoes sailed the seas to the isles of the West; prospectors with picks of horn and flint revealed the treasures of the earth and crossed mountain passes in search of merchandise. These explorers were the forerunners of Greeks and Phœnicians; the paths they discovered have been followed by Roman roads and modern railways.

The monuments of early man are but insignificant bits of flint and stone, bronze and baked clay. Yet such fragments embody concretely the achievement of our spiritual ancestors. In such rude implements are revealed the preconditions of our gigantic engines and of the whole mechanical apparatus that constitutes the material basis of modern life. Progress is an indivisible whole in which the invention of a new way of hafting an axe formed a necessary prelude to the invention of the steam-engine or the aeroplane. In the first innovations the germs of all subsequent improvement were latent ; and the first steps on the path of discovery were the hardest. Thus the achievements of our nameless forerunners are in a real sense present in our cultural heritage to-day.

In conclusion, I should like to express my deep indebtedness to many workers in the same field, not excepting those whose conclusions I have been unable to accept. Moreover, to supplement their published works which I so often cite, Mr. M. C. Burkitt, Sir Arthur Evans, Sir John Forsdyke, Mr. W. A. Heurtley, Dr. Ferencz Laszlo, Dr. Adolf Mahr, Mr. Harold Peake, Dr. P. Reinecke, Prof. Tallgren, Dr. P. Vouga, Prof. A. J. B. Wace, and others have very kindly given me valuable advice and assistance on several points. To Miss M. Joachim I owe a further debt of gratitude for reading the proofs. For permission to reproduce here illustrations from their publications I am indebted to the courtesy of Dr. Ailio (Helsingfors), the Accademia dei Lincei, the Trustees of the British Museum, the British School at Athens, the Editors of the *Bullettino di Paletnologia Italiana*, the Cambridge University Press and Messrs. Wace and Thompson, the Comisión de Investigaciones paleontológicas y prehistoricas and Prof. H. Obermaier (Madrid), Sir Arthur Evans, Prof. Kozłowski (Lemberg), the Greek Ministry of Public Instruction, Dr. J. Schráníl (Prague), Mr. R. B. Seager (Crete), Dr. H. Seger (Breslau), the Royal Anthropological Institute, the Society of Antiquaries of London, the Société des Antiquaires du Nord (Copenhagen), the Société d'Anthropologie de Bruxelles, Dr. Stocký (Prague), the Schweizerisches Landes-Museum (Zurich), Prof. A. M. Tallgren (Helsingfors), Prof. Tsountas (Athens), the University of Bordeaux, Faculty of Letters, the K. Vitterhets, Historie och Antikvitets Akademien (Stockholm) the Director of the Prähistorische Abteilung of

the Museum für Völkerkunde (Berlin), Dr. P. Vouga (Neuchâtel), and others.

I might add that the index is especially designed to enable the layman to locate at once the explanation (usually illustrated by figures) of the technical terms inevitably employed.

V. GORDON CHILDE.

PREFACE TO THE THIRD EDITION

WHEN this book was first published in 1925, large tracts of Europe were blanks on the archæological map ; in few of the remaining areas had the evidence, dispersed among local museums and the pages of inaccessible periodicals, been assembled in systematic monographs. Only a vague picture could be constructed by piecing together the scattered fragments and filling in the gaps by inferences. Since then fourteen years of feverish archæological activity have transformed European prehistory. The unknown, or scarcely known, tracts of Macedonia, Wallachia, and Southern Hungary have been scientifically explored. Startling new discoveries in regions that seemed so well charted as England, Denmark, and Greece have invalidated what seemed well-established truths—the genuinely neolithic culture of England, for instance, was first defined by Leeds in 1927! Detailed surveys of several provinces have not only conveniently assembled accumulated data, but have invested them with fresh significance.

To correct its deficiencies, the original text had not only to be enlarged ; it had to be completely rewritten. The apparent simplicity of the picture, offered in 1925, proves largely due to ignorance. The new discoveries introduce fresh complications as they raise the abstractions of prehistory nearer to the concrete complexity of history. But the essential outlines of the thesis, originally advanced, still holds good. Our deepened knowledge of the archæology of Europe and of the Ancient East has enormously strengthened the Orientalists' position. Indeed we can now survey continuously interconnected provinces throughout which cultures are seen to be zoned in regularly descending grades round the centres of urban civilization in the Ancient East. Such zoning is the best possible proof of the Orientalists' postulate of diffusion.

Indeed revolutionary discoveries, published even during 1938, warn us that the picture here presented is still in a high degree provisional. But further postponement of the new edition seems indefensible. Perhaps we are standing at the end of an era of free research. Over a large part of our

Continent prehistory has been harnessed to the service of a political dogma. Reliable additions to knowledge there can hardly be expected now. It will be useful to sum up objectively the position attained before September, 1938.

I have to thank Dr. Grahame Clark, Prof. Daryll Forde, Miss Winifred Lamb, F.S.A., and Mr. R. W. Hutchinson, F.S.A., for very kindly reading and helpfully criticizing sections of the text, and Mr. A. J. H. Edwards and Mr. R. B. K. Stevenson for reading the proofs. In addition to those named on pp. xv-xvi, we are indebted to the Council of the British School at Athens, the Editor of *Antiquity*, Mrs. Hawkes, Mr. W. A. Heurtley, and Miss W. Lamb for permission to reproduce figures.

V. GORDON CHILDE.

University of Edinburgh.

March 1939.

TO THE FOURTH EDITION

Scientific liberty foreseen in the Preface to the first edition has materialized a couple of months after the outbreak of the course of the resistance the whole world has witnessed. So, the attack having been repulsed, the revision of the text has given me the opportunity to revise the material discovered or made accessible during the war. The closer contact with colleagues in the West, and from the alliance against Hitlerism, has necessitated a complete rewriting of chapters viii, ix, and xi. Many new discoveries in Denmark have radically altered chapters viii and x. Information collected on the spot in Copenhagen has inspired me to attempt a new prehistory in chapter xiii. But it should be noted that the material here published in Bulgaria, Czechoslovakia, and the Soviet Union in 1939 is not yet available in the British Isles. The discoveries made in those regions are known from Italian citations or not at all. I am indebted to Mr. R. B. K. Stevenson for very many suggestions and proofs.

V. GORDON CHILDE.

THE DAWN OF EUROPEAN CIVILIZATION

CHAPTER I

SURVIVALS OF FOOD-GATHERERS

DESPITE a startling refinement of industrial equipment and a masterly graphic art Pleistocene Europe altogether lacked civilization in the economic sense. During the last Ice Age collective hunts on open steppes and tundras in South Russia, Moravia, and France yielded such plenteous and reliable supplies of mammoth, reindeer, bison, and horse flesh, that the hunters could establish relatively permanent camps and enjoy leisure to cultivate art. But they remained, none the less, pure food-gatherers, dependent on what the environment offered them. With the passing of glacial conditions, the old herds vanished; forest, invading the open lands, rendered obsolete the familiar technique of communal hunting, and so the culture based thereon shrivelled and decayed. Indeed last century it appeared that Europe, abandoned by reindeer and mammoth-hunters, was left an empty wilderness for neolithic immigrants to subdue to pasturage and tillage.

Forty years' researches have erased the last outlines of that picture. Archæologists have discovered the remains left by various communities occupying Europe continuously since the close of the Ice Age, but still lacking the hall-marks of neolithic civilization. Their remains constitute cultures that are termed mesolithic, because in time—but only in time—they occupy a place between the latest palæolithic and the oldest neolithic cultures. At the same time botanists and geologists have defined more precisely the changes in environment to which the mesolithic cultures were adaptations. Modern vegetation was only slowly established in the glacial landscape; a temperate climate did not abruptly replace an arctic one.

In northern Europe phases in the colonization of the once frozen plains by forest trees have been determined with great

precision by pollen-analysis (i.e. a quantitative study of the pollen grains preserved principally in peat mosses).¹ The first immigrants were birches and willows, then come pines, later the hazel, soon followed by elms, limes and oaks—the mixed oak woods—lastly, in Denmark, the beech. But of course the composition of a forest is profoundly affected by topographical and geological as well as climatic factors so that even on the North European plain itself the local variations are large and significant. Stages in the gradual amelioration of climate can also be distinguished, largely on the basis of the same botanical evidence. In North Europe a cold Pre-Boreal regime of long duration was superseded by a continental Boreal phase, characterized by summers longer and warmer than to-day, but severe snowy winters. Next a relatively abrupt increase of rainfall and westerly winds affected North-Western Europe without reducing the average annual temperature so that the climate of Denmark was really Atlantic, and mixed oak woods attained a maximum extension at the cost of pine woods. In Britain on the contrary excessive rain and wind caused deforestation in exposed areas.² Gradually the course of the Atlantic storms shifted again allowing a second period of forest growth in England, but inducing some contraction on the Continent. This phase, still warmer than to-day, is termed the Sub-Boreal. It ultimately ended with the onset of modern cold wet weather in an exaggerated form in the so-called Sub-Atlantic phase. Of course the terms Boreal, Atlantic, and so on, are not strictly applicable to Switzerland or South Germany³ and are meaningless in Mediterranean lands: they were devised in Denmark and Sweden, where alone they are accurately descriptive.

In the meanwhile the distribution of land and water was also changing. The release of the vast volumes of water locked up in glaciers during the Ice Age produced a general, if gradual, rise in sea level or *marine transgression*, but this was offset in the north, where the accumulations of ice had been deepest and heaviest, by an "isostatic" re-elevation of the earth's crust that had been depressed by their weight. Round the Scottish coasts the late glacial sea had formed a beach some

¹ Clark, 1936, 23-40; note the cautions by Bertsch, *BRGK.*, XVIII (1928), 1-65.

² Childe, *Scotland*, 9-12.

³ *BRGK.*, XVIII, 65.

100 ft. above the present strand while corresponding strand-lines in Scandinavia may be 200 m. above sea-level to-day. The Baltic depression was occupied by a frozen sea, communicating with the Arctic Ocean and termed the *Yoldia Sea*. The rebound of the earth's crust on the melting of the super-incumbent ice raised strips of the Scottish coast above their present relative level and isolated the Baltic depression; it was occupied by the *Ancylus Lake*, rendered slightly brackish by a small inflow of salt water across Central Sweden. At the end of Boreal times the continued rise of sea-level opened the Belts so that salt water poured into the Baltic depression, forming the *Littorina Sea*, larger and saltier than the modern Baltic. England was completely separated from the Continent while in Scotland whales could swim up the enlarged Forth estuary to above Stirling. The resultant extension of the area occupied by warm salt water was perhaps the cause of the shift in storm tracks that brought about the Atlantic phase of climate in the North. But north of a line that runs through southern Zealand and co. Durham the isostatic re-elevation of the land has continued so that the shore line of Atlantic times is now represented by the "25 ft. raised beach" in North Britain and corresponding raised strands round the Baltic.¹ Nevertheless some time elapsed before this local re-elevation of the land overtook the general rise in sea-level, so that in marginal areas like Denmark and East Anglia several local transgressions can be distinguished. In Denmark and Southern Sweden in fact four have to be admitted—the first at the beginning of the Atlantic phase, the last, and sometimes the greatest, during early Sub-Boreal times,² coinciding with Montelius' Neolithic III *a* and *b* (p. 205).

This changing environment constitutes for the archaeologist a provisional chronological framework, but contemporary men had to adjust their cultures to it. To small groups of food-gatherers the temperate forests offered greater facilities for picking up a bare livelihood without intensive social co-operation or a highly specialized kit-bag than had the bleak hunting-grounds of the Ice Age. Mesolithic groups appear in general isolated and poorly equipped in contrast to Magda-

¹ Clark, *Northern Europe*, 7-22; Childe, *Scotland*, 9.

² "Aamosen," 1943, 162; *Arsberättelse*, 1937-8, 36-96; cf. *New Phytologist*, XIV (1944), 64.

lenians or Pĕdmostians. But all had acquired, or themselves domesticated, dogs whose co-operation would be of greatest assistance to man precisely in the pursuit of the smaller, less gregarious game of the new woodland. Everywhere the collection of nuts, snails, and shell-fish played a conspicuous part in the new economy. Several of the mesolithic cultures are clearly just the responses of palæolithic survivors to the new environment.

The *Swiderian* culture,¹ represented by assemblages of small flint tools collected from sand-dunes in Russia and Poland, sometimes under fossil turf-lines of Atlantic age, is characterized by small asymmetrically tanged-points (Fig. 1)



FIG. 1. Swiderian flint implements, Poland. After Kozłowski. (4.)

used presumably as arrow-heads, but morphologically descended from the large dart-heads used by the South Russian mammoth-hunters. Such was their ultimate response to the extinction of the mammoth.

Descendants of the Franco-Cantabrian Magdalenians who combined with hunting and collecting fishing with the harpoon in the ancestral manner, created the *Azilian* culture.² The Azilians like their ancestors lived by preference in caves where they buried their dead too.³ The famous cave of Ofnet in Bavaria contained a nest of twenty-one skulls, buried without the trunks, but not belonging certainly to Azilians. Because eight of the skulls were brachycranial, anthropologists used to think that the burial indicated the immigration of a new race into Europe, but now admit that at least a tendency to round-headedness existed among Upper Palæolithic Europeans.⁴ The Azilians' equipment seems poor. The type fossil is the harpoon

¹ Clark, 1936, 62; similar cultures are here reported from Belgium and Germany.

² Obermaier, *Fossil Man in Spain*, 1925, 340 f.

³ e.g. in Ariège, *L'Anthr.*, XXXVIII (1928), 235.

⁴ See C. S. Coon, *Races of Europe*, 1939, 35-6, 67-8.

of red-deer's antler (Fig. 2), flat and clumsy in comparison with the ancestral Magdalenian instrument of reindeer antler. Flint blades and gravers persist, but tend to be diminutive. The cores could be used for wood-working, but were not specialized into axes. However, some heavy wedge-like tools from the cave of Bize (Aude) may denote responses to the needs of primitive carpentry. And in the late Azilian deposit in the Falkenstein Cave (Hohenzollern)¹ an antler sleeve was found of a type later used for mounting axes and adzes. (Here the idea might have been borrowed from the neighbouring Forest

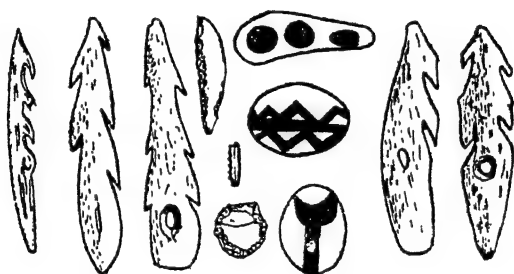


FIG. 2. Magdalenian harpoon from Cantabria and Azilian harpoons and painted pebbles from Ariège. (§.)

peoples.) The only reminiscences of Magdalenian art are highly conventionalized figures painted on pebbles.

The cave deposits suggest that the Azilians lived in very small and generally isolated communities; their isolation was not however complete since shells of *Columbella rusticana*, imported from the Mediterranean, reached the Falkenstein Cave.¹ Some sort of boat must have been available since Azilians encamped on small islands.² Azilian encampments are found on the slopes of the Cantabrian mountains and the Pyrenees, of the Massif Central, the Jura, Vosges and Black Forest, Alpine foothills, and finally on the south-west coast of Scotland.² In south France the Azilian succeeds the Magdalenian almost immediately, presumably in Boreal times; the Scottish sites are situated above the 25 ft. beach and must be Atlantic in age. The discrepancy must indicate the slow rate of migration by short stages presumably along tracts of coast now submerged.

¹ *Germania*, 18 (1934), 81-8.

² *Childe, Scotland*, 14-17.

Descendants of the local Aurignacians created a very similar culture in early post-glacial times in the Crimea¹ and Transcaucasia. They too lived in caves and buried the dead therein either in the contracted position or extended. They had tamed a local wolf or jackal to help them in the chase. In the Crimea harpoons of bone, but of Azilian form, and slotted points armed with flints as in the Forest cultures, appear late. Geometric microliths, at first triangles and lunates, later also trapezes, were made and that even in layers that contain pottery and polished celts and so look formally neolithic.²

The *Tardenoisian* culture survives in the archæological record almost entirely in the form of pigmy flints or microliths, ingeniously worked into regular geometrical shapes—triangles, hombs, trapezes and crescents—or into microgravers (Fig. 3)

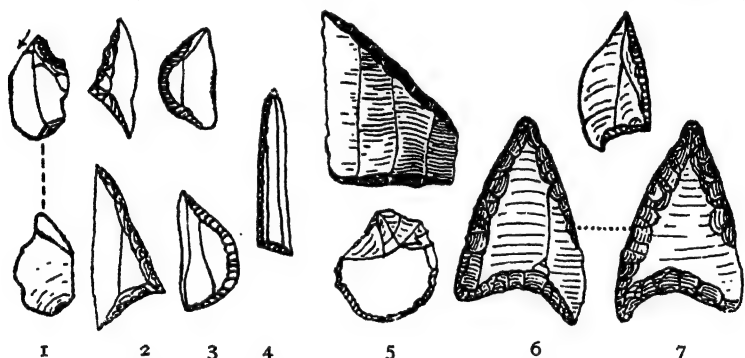


FIG. 3. Geometric microliths (2-5) and microgravers (1) from Franconia. After Gumpert (†).

that may be a by-product in their manufacture. All were presumably parts of composite tools of wood or bone, but no one knows why the little blades should be so carefully trimmed. Their makers camped exclusively on sandy soils,³ that would be lightly wooded, and sheltered at first often in caves, but also in flimsy huts,⁴ partly sunk into the sandy soil. At Muge⁵ on the Tagus and Tevieg,⁶ now an island on the coast of Morbihan,

¹ Hančar, *Kaukasiens*, 116-126, 148-150, 194-206; *SA.*, I, 195-212; V, 160-175; 299.

² *SA.*, V, 97-100; *KS.*, IV, (1940), 29.

³ Clark, 1936, 190-4.

⁴ Clark, 1936, 198; *Antiquity*, XI (1937), 477; Gumpert, *Fränk. Mesolithikum* (*Mannus Bibliothek*, 40), 14-27.

⁵ Obermaier, *op. cit.*, 324; *CIIA.*, Paris, 1931, 362.

⁶ Pequart, Boule, and Vallois, *Inst. Pal. Hum.*, *Mem.* 18 (1937), with important section on mesolithic races in general.

SURVIVALS OF FOOD-GATHERERS

Tardenoisians settled on the open shore, hunting and collecting shell-fish and leaving mounds composed of the debris of their repasts. Skeletons, some brachycranial, were buried in these midden heaps in the contracted attitude—at Teviec wearing crowns of red-deer antlers, protected by stones on edge and covered with a heap of boulders.

A tendency to reduce the size of flint blades was common to many Upper Palæolithic industries, but led regularly to geometric forms only in Africa. Burial in shell-middens is also characteristic of the North African Capsian. It is therefore believed that the Tardenoisians include immigrants driven north by the incipient desiccation of the Sahara at the close of the European Ice Age. But they spread over an enormous territory in Europe including the greater part of the Iberian Peninsula, France, Britain, Belgium, South and Central Germany, Poland and Russia. Perhaps several waves of immigrants coming across Spain, Asia Minor, and the Caucasus



FIG. 4. Microliths from Muge, Portugal, and transverse arrowhead shafted from Denmark (†).

should be invoked to explain this dispersion. In any case Tardenoisians had reached Britain, Belgium, and South Germany in Boreal times.¹ But in both Britain² and France³ and probably too in south-west Germany⁴ and Portugal⁵ Tardenoisians still survived, retaining their primitive economy and microlithic traditions in industry, when a neolithic or even a Bronze Age economy had already been established among neighbouring groups. And certain Tardenoisian types—trapezes and lunates—used by later communities in the

¹ Clark, 1936, 211–213.

² Ibid., 217; 1932, 51.

³ e.g. at Sauveterre (Lot-et-Garonne) Tardenoisian microliths were associated with finger-tipped cordoned pottery and tanged and barbed arrow-heads, Coulonges, *Inst. Pal. Hum., Mem.* 14 (1935), 26.

⁴ Childe, *Danube*, 18.

⁵ Sherds of decorated "cave" pottery were found at least in the upper levels of the middens.

Peninsula, France, and South Russia, may denote the absorption of Tardenoisian hunters by food-producing peoples. Microlithic must not be mistaken for mesolithic.

*Asturian*¹ is the term applied to the culture of strand-loopers who succeeded the Azilians on the coasts of North Spain and appear in Portugal too. They lived very largely on shell-fish during a period of greater rainfall than the present and are characterized in the archæological record by a pick-like tool formed by chipping a beach pebble to a rough point.

Though inhabiting wooded countries, none of the communities so far described give any sign of a sustained effort to master this element in their environment by the elaboration of

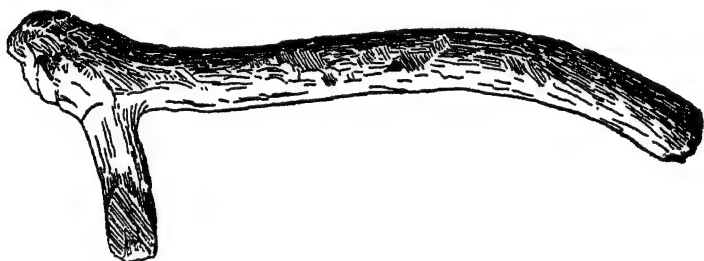


FIG. 5. "Lyngby axe" of reindeer antler, Holstein (4).

specialized carpenter's tools. Peoples occupying the forested plain of North Europe on the contrary did develop adzes and axes for dealing with timber. To emphasize this adaptation to their environment they may be grouped together as the Forest folk. Their ancestors had advanced as far north as Jutland, before the end of Pre-Boreal times. The pioneers in the colonization were known down till 1936 only by stray discoveries of "Lyngby axes"—reindeer antlers on which the brow tine has been trimmed to form an adze or an axe edge or the socket for a flint blade (Fig. 5). In 1936 a camp of the reindeer-hunters was located on the banks of a shallow mere at Stellmoor (Ahrensburg), near Hamburg.² The reindeer were killed with arrows tipped with asymmetrically tanged flint points (of Ahrensburg type), fish or birds speared with barbed harpoons of reindeer antler that had been carved with flint gravers.

¹ Obermaier, op. cit., 349-358; *CISPP.*, London, 1932, 95.

² *Offa*, I (1936), 2-18; summarized by Clark, *Antiquity*, XII (1938), 165-9. The new finds prove that Ahrensburg is identical with Lyngby.

Each year the first-fruits of the chase, weighted with a stone in the breast, were thrown into the mere as offerings to the spirits of the land; a reindeer's skull, mounted on a post was planted on the shore like a totem pole. Stellmoor seems to be a temporary camping place for hunters whose homes presumably were situated farther south and whose ancestors had created the "eastern facies" of Magdalenian culture. Chisel-like tools of antler are in fact common in the Magdalenian of Petersfels (Wurtemberg)¹ and Lyngby axes had been used in pleistocene times in Moravia, Hungary, and Moldavia,² where woods survived the Ice Age.

In Boreal times the Forest folk had spread all over the still unbroken North European plain from Southern England to Finland, and had achieved a very nice adjustment to their environment of pine woods, interrupted only by lakes and rivers. In England, Germany, and Denmark they had apparently joined forces with the Tardenoisians; they had at least learned to make geometric microliths in the Tardenoisian manner. And while hunting expeditions brought the widely scattered groups into contact from time to time, fishing beside streams and meres encouraged more permanent encampment so that equipment was already being differentiated locally to meet divergent conditions. Within the larger continuum local facies or cultures can be distinguished in England,³ Denmark, and North Germany,⁴ the East Baltic⁵ (Kunda) and perhaps the Norwegian coast. But the Maglemose⁴ near Mullerup and other classic sites in Zealand supply material for an adequate picture, applicable with modifications to the rest.

These were summer-camps, submerged each winter, whither men repaired for hunting, fowling, fishing, and nut-gathering. For these ends they employed many devices and a highly specialized equipment—slotted bone points armed with flints (Fig. 6, 3), several kinds of "harpoon" (Fig. 6, 1-2), bone fish-hooks, nets of lime-bast with pine-bark floats, spheroid or

¹ Brock, *Die altsteinzeitliche Kulturstätte von Petersfels*, 43.

² Dacia, V-VI (1934-5), 12, pl. III; *Antiquity*, XVI (1942), 259.

³ *JRAI.*, LXIV (1934), 101-128; no bone work survives in the settlements, but characteristic harpoons have been found in Holderness, near Cambridge, and in the Thames and dredged up from the North Sea. Clark, 1932, 17, 115; Childe, *PCBI.*, 26-8.

⁴ Full description in Clark, 1936.

⁵ Indreko, "Vorläufige Bemerkungen über die Kunda-Funde," *Sitzungsbericht d. gelehrten Estnischen Gesell.*, 1934 (1936).

spiked stone mace-heads perforated by percussion,¹ and wooden clubs. East of the Baltic conical wood or bone arrow-heads were employed (Fig. 99, below) for killing fur-bearing animals with minimum damage to the pelts and a specialized antler pick for breaking the ice. Bone needles were made for netting, flint gravers for cutting bone, small disc scrapers (Fig. 6, 4) for dressing skins, and split boars' tusks for knives. The wood-worker was now provided with chisels of antler, socketed chisels made from marrow bones of large game (Fig. 6, 8),

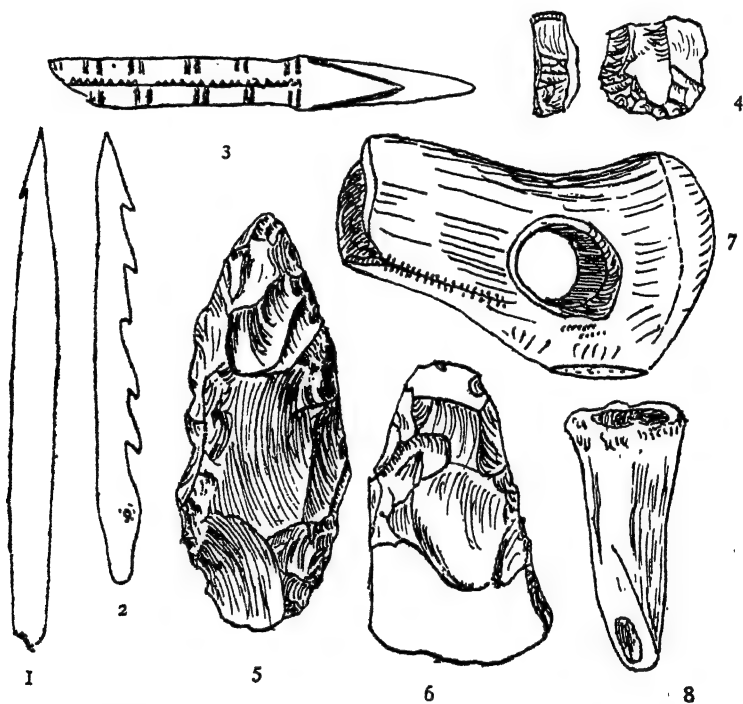


FIG. 6. Maglemosean types from Zealand. 1-3, 7-8 ($\frac{1}{2}$); 4 ($\frac{3}{8}$); 5-6 ($\frac{3}{8}$).

perforated antler adzes, and flint core-axes (Fig. 6, 5) or exceptionally flake-axes (Fig. 6, 6) mounted as adze-blades in perforated antler sleeves (Fig. 6, 7). East of the Baltic, where flint was scarce, the adze-blades were pebbles sharpened, like

¹ At least one of the spiked "Vögtland" type has been found in a Boreal context: Clark, *Northern Europe*, fig. 38; *Mannus*, XXV, 271 ff.

the antler tools, by grinding. In England the flake-axe was still unknown.

Communications were maintained most easily by water in boats, presumably of skins, which have not survived, though the paddles that propelled them are extant. For land transport over the winter snows dog-sledges were perhaps available east of the Baltic.¹ Dogs of a wolfish type were everywhere domesticated and may be the ancestors of modern sledge-dog breeds. The electrical properties of amber had already been recognized as a magic virtue so that the substance was collected in Denmark. Aesthetic satisfaction was obtained by decorating bone implements with geometric patterns, generally outlined by a series of points in the so-called drill-technique.

The Boreal forest cultures may be derived without remainder through the Lyngby complex from Upper Palæolithic cultures of East and Central Europe. Links between their axe-like tools and the Lower Palæolithic hand-axes seem totally lacking. Only the Finnmarkian² of Norway offers remote possibilities of affiliation with an East Siberian cycle, since both exhibit implements of Middle Palæolithic type associated with graves.

The marine transgression that ushered in the Atlantic phase broke up the unity of the Forest cultures and offered new opportunities to certain groups. Rich oyster banks combined with sealing and sea-fishing allowed communities to settle down at sheltered spots along the Danish and South Swedish coasts. The *Ertebølle culture* represents the appropriate adjustment.³ The sites are marked by huge shell-heaps (that may be 100 yards long and 30 yards wide), the refuse of a sedentary population, still, however, practising a gathering economy. The exposure of new deposits of superior flint resulted in an increasing substitution of flint for bone in making heavy tools. Flake-axes were preferred to picks, plump green-stone axes were

¹ A runner was recovered from a Boreal peat in Finland, *SM.*, XXXVIII-IX (1932-2), 60; XLI, 121; XLII, 22.

² Dwelling places on high strands of the North Sea and Arctic Ocean have yielded flake- and core-axes, tanged points, graves, and some "Moustieriform" tools, but no bone-work, Bøe and Nummedal, *Le Finnmarkien*, Oslo, 1936.

³ Clark, *Northern Europe*, 138-156, but cf. now *Acta Arch.*, VIII (1937), 278-294; Mathiassen, "Bopladsen Dyrholmen," *K. Dansk. Videns. Selskabs Ark.-Kunsthist. Skrifter*, I, 1 (1942); Bagge and Kjellmark, *Siretorp.*; and "Aamose", 136-144.

sometimes made by grinding, as earlier in the East Baltic, but perforated antler axes¹—no longer adzes—and sleeves for axes were still made. The only microliths manufactured were transverse arrow-heads. Fish were not speared with harpoons but caught with hook and line. The sedentary life permitted the manufacture of pottery in the form of large jars with pointed bases and troughs that may have been used as blubber lamps. A taste for personal adornment is indicated by bone combs and armlets. The dead were buried extended in the middens.²

While the coastal populations thus took advantage of a new environment, the communities inhabiting Norway, Central

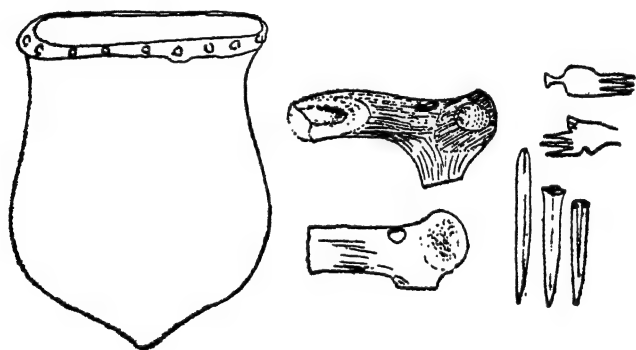


FIG. 7. Ertebølle pot, antler axes and bone combs, Denmark. (†.)

Sweden, the East Baltic lands and even the interior of Jutland and Schleswig-Holstein remained true to the Boreal way of life and preserved much of the old equipment—particularly harpoons or, as in the *Gudena culture* of Jutland,³ geometrical microliths—throughout the greater part of the Atlantic phase. Similar survivals to the south and west might be expected, but only at Lower Halstow⁴ on the Thames estuary is a culture of

¹ These "axes" and the earlier "adzes" would not be much good for chopping since the shafts actually preserved are hazel stems not over 2 cm. thick though as much as 50 cm. long; Mathiassen, "Dyrholmen," 24.

² Brøndsted, *Danmarks*, i, 115; round-heads exceeded long heads in the ratio of 3 to 2, *ibid.*, 123.

³ Mathiassen, "Gudena-Kulturen," *Aarbøger*, 1937.

⁴ Clark, 1936, 158.

mesolithic character dated botanically to Atlantic times. The famous site at Le Campigny, Seine Inferieure, once the type station of a mesolithic culture, now turns out to be a typical settlement of the intrusive Western neolithic culture just as in Denmark itself the Ertebølle culture with core and flake-axes of flint—has been proved to persist into the second phase of the local neolithic.

Many prehistorians have wished to explain the innovations seen at Ertebølle—notably the pots and the ground stone axes—by some sort of immigration from the south-west. But though coastal gatherers were still making their coarse Ertebølle pots in Denmark and Southern Sweden after neolithic peasants with a finer technique had arrived in early Sub-Boreal times, no trace has been found yet of previous colonists to teach the gatherers' ancestors in Early Atlantic times.¹ Ertebølle pottery seems to be a local invention, but not the source of even the Danish neolithic peasants' pottery, still less that of the much earlier cultivators in Hither Asia and North Africa. The Northern Forest-folk may further be credited with the development of a serviceable axe and even the invention of the "polished stone celt"—the typologists' criterion of "neolithic"—through the transfer to stone of techniques first applied to bone. Favourably situated for a food-gathering existence and well equipped to exploit their advantages, their environment offered no inducements to change their economy, no cereals to cultivate, no sheep to tame. Still less did it impose upon them the stern discipline that led to city life.

In general the mesolithic cultures just described fill gaps in time and prove the occupation of parts of Europe from the glorious days of mammoth hunting. None illustrates in any sense a transition from the old food-gathering economy to a new food-producing one. Is it not significant that mesolithic cultures are most richly represented in regions remote from the oldest historical centres of civilization and the native habitat of wild cereals and wild sheep? Whatever part mesolithic folk may have formed in neolithic populations, the flocks of sheep and the seeds of grain on which the new economy was based were not carried by wind or intertribal barter, but brought by actual immigrant shepherds and cultivators.

¹ "Aamose," *Nord. Fort.*, III, 3, 93-7.

DAWN OF EUROPEAN CIVILIZATION

The following table will help readers to follow the very complicated relations between climatic phases, sea-levels and human cultures in the West Baltic region described in Chapters I, IX, X and XI.

CLIMATIC PHASE	PHASE OF BALTIC	HUMAN CULTURES	
		HUNTER-FISHERS	FARMERS
Boreal	Ancylus Lake	Mullerup Gudena Maglemosean	
Atlantic	First Transgression	?	Gudena
	Second Transgression	Ertebølle (very few potsherds)	Gudena
	Third Transgression	Ertebølle (many potsherds)	?
Neolithic I (Virring, Vrå)			
Neolithic II Dysser (Barkaer)			
Sub- Boreal	Last Transgression	Ertebølle Gudena	Neolithic III Passage Graves
			A B Battle- C axe D cultures

Cf. Fourth Annual Report, Institute of Archaeology, University of London, 1946-7 (1948), pp. 46-60.

CHAPTER II

THE ORIENT AND CRETE

THE now desiccated zone of North Africa and Hither Asia had been grassy prairie when Northern Europe was tundra or ice-sheet. And therein grew the wild grasses that under cultivation became our wheats and barleys; sheep and cattle fit for domestication roamed wild. In such an environment human societies could successfully adopt an aggressive attitude to surrounding nature and proceed to the active exploitation of the organic world. Stock-breeding and the cultivation of plants were revolutionary steps in man's emancipation from dependence on the external environment. They put man in control of his own food-supply so far that population could—and did—expand beyond the narrow limits imposed by the naturally available supply of wild fruits and game. But the expansion of population led by its very conditions to the expansion of the revolutionaries themselves—the primitive half-sedentary farmers—or their transmutation by a second revolution into a settled peasantry producing surplus food-stuffs for its own surplus offspring who had become artisans and traders, priests and kings, officials and soldiers in an urban population.

The second revolution was accomplished first in the valleys of the Nile, the Euphrates, and the Indus. The considerations adduced in the preceding paragraph would lead us to expect that the first or neolithic revolution too began in the same East Mediterranean area. By 3000 B.C. archæology and written history reveal Mesopotamians and Egyptians already grouped in vast cities any one of which might, like Erech, measure 2 square miles in area, and in which secondary industry and trade offered an outlet for the surplus rural population. But beneath the oldest historical buildings in Sumer and Assyria some 70 feet of debris from prehistoric villages bear substantial witness to the immense antiquity of settled life in the Tigris-Euphrates valley. Behind the monumental cemeteries of the first Egyptian Dynasties, hundreds of prehistoric graves, ranged in the consecutive periods termed Badarian, Amratian, Gerzean, and Semainian open a no less

extensive vista back to the remote beginnings of food-production on the Nile.

In *New Light on the Most Ancient East* I have tried to sketch in some details in that prehistoric background of Oriental history. And I have tried to show too how the first revolution that precedes it had to spread, and how the growing demands of the new urban centres of population and wealth must involve the propagation both of the arts and crafts on which the second revolution rested and of the economy that sustained it. To find food for rising generations the simplest step was to bring fresh land under cultivation. To supply the needs of Mesopotamian or Egyptian cities the Anatolian or Syrian villages thus formed must turn themselves into cities producing a surplus of farm-produce to support industrial workers and traders. And villages, thus urbanized, must become secondary centres of demand and for diffusion; they must in turn repeat the process of propagation, generating thereby tertiary centres to carry on the work. We should thus expect a hierarchy of urban or semi-urban communities, zoned, not only in space, but also in time and in cultural level around the metropolises of Egypt, Mesopotamia, and India. How far does prehistoric Europe confirm such anticipation?

By its spatial position and by special favours of the winds and currents the great island of Crete is easily accessible from the Nile, from Syria, from Anatolia, and from peninsular Greece. Its fertile lowlands guarantee a living to farmers and orchardists; its resources in timber, copper, and other raw materials can supply the needs of secondary industry; its natural harbours are not only bases for fishermen, but havens for merchants who can transport Cretan produce to urban centres and bring back in return the manufactures and also the science of older cities.

The ruins of neolithic villages have formed a tell, 6.5 m. high, beneath the oldest Minoan levels at Knossos in Central Crete where the Minoan civilization was first identified. But trial pits have revealed but little of the neolithic culture.¹ It was formally neolithic in that pebbles were ground and polished to make plump celts (axes and chisels). But obsidian was imported from Melos and from Yali so that the farmers were hardly self-sufficing. For the later levels indeed the term

¹ Pendlebury, *Archæology of Crete* (London, 1939), 35-41.

neolithic is not even formally correct since a copper flat axe was found on a house floor with stone celts. Stone was also drilled to make spheroid and pear-shaped mace-heads and worked into studs and even vases. The latest houses consisted of agglomerations of small chambers with fixed hearths and stone foundations for their walls.

Pottery, though hand made, was of fine quality, self-coloured grey-black or red-brown according as to whether it were fired in a reducing or an oxidizing atmosphere¹; the surface was often burnished, sometimes so as to produce a decorative rippled effect. The forms cannot be called primitive: the vases may be provided with genuine handles (including the wish-bone variety) instead of mere lugs and even with short spouts. Goblets on tall, half-solid pedestals and a globular jar with strap handles in the belly appear before the period ends. Ladles are common as in Lower Egypt and Western Europe. The potter decorated her products with incised patterns including triangles and ribbons filled with punctures.

For their fertility rituals the farmers modelled in clay or carved in soft stone highly conventionalized figurines of the "Mother Goddess", seated or squatting (Fig. 8). As amulets they wore miniature stone axes pierced for suspension (axe amulets). Caves were used for burials but for individual interments, not as ossuaries.²

Since palæolithic food-gatherers have left no relics on the island, we may assume that the earliest Cretan farmers were immigrants who brought their neolithic equipment with them. "Neolithic Crete," writes Evans, "may be regarded as an insular offshoot of an extensive Anatolian province." His table (Fig. 8) shows many Asiatic relatives to the squatting figurines. The self-coloured pots, with handles and spouts, have a general Anatolian aspect, the fine grey wares can be paralleled in the "Chalcolithic levels" of Megiddo³ and in the deepest layers of many Asiatic tells.⁴ The mace-heads too belong to an Asiatic family but recur, like the axe-amulet, in the neolithic village of Merimde⁵ in Lower Egypt, which also

¹ BSA., XXXVII, 31-3.

² BSA., XXXVIII, 15.

³ Engberg and Shipton, "The Chalcolithic Pottery of Megiddo" (O.I.C. Studies, 10), p. 61.

⁴ AJA., XLI, 11 (Judeideh on the Orontes); LAAA., XXIV, 133 (Sakje-Geuzi); XXVI, 66-70 (Mersin); Syria, XVI, 162-5 (Ras Shamra), etc.

⁵ Childe, NLMAE., pp. 59-61.

yielded plump axes and clay ladles. But punctured ribbon decoration and pedestalled goblets have analogies also in the

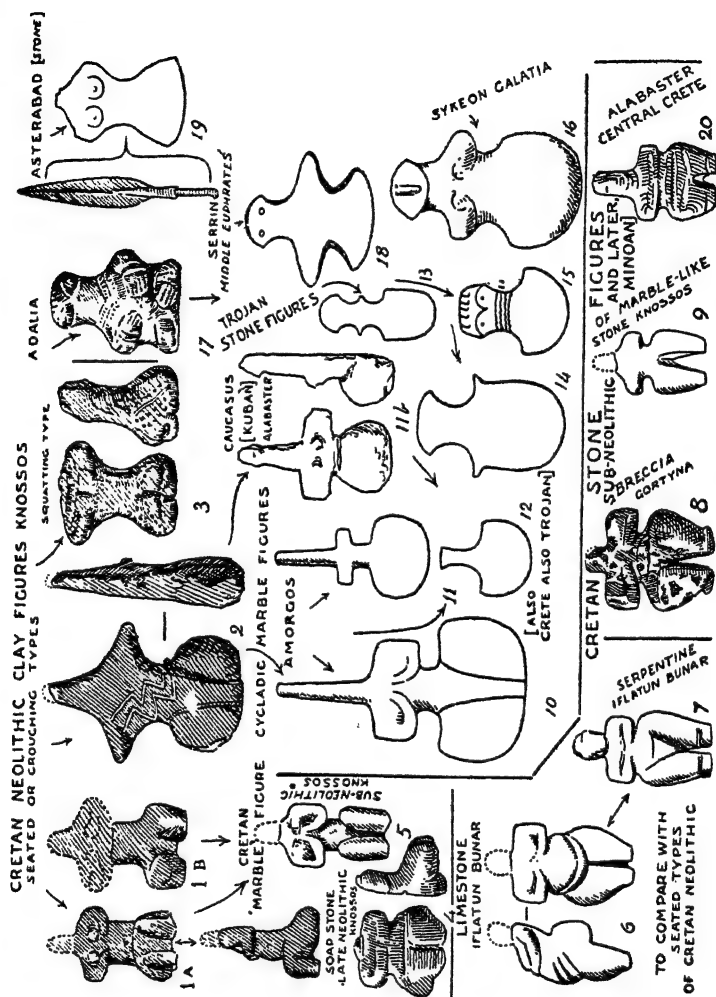


FIG. 8. Neolithic figurines from Crete and their relatives. After Evans.

Balkans (p. 88), and the wishbone handle is typical of the Macedonian Bronze Age. Indeed in the "transitional" pottery of the Trapeza cave in the mountainous interior, cordoned decoration and a schematized human face on the vase rim are still more reminiscent of Balkan and Apennine wares.¹

¹ BSA., XXXVI, 30.

The "neolithic" phase was ended by a "quickening impulse from the Nile, which permeated the rude island culture and transformed it" into the Minoan civilization. Evans suspects an actual immigration of predynastic Egyptians, perhaps refugees from the Delta fleeing from Menes' conquest. At least on the Mesará, the great plain of Southern Crete facing Africa, Minoan Crete's indebtedness to the Nile is disclosed in the most intimate aspects of its culture. Not only do the forms of Early Minoan stone vases, the precision of the lapidaries' technique and the æsthetic selection of variegated stones as his materials carry on the predynastic tradition. Nilotic religious customs such as the use of the sistrum, the wearing of amulets in the forms of legs, mummies and monkeys, and statuettes plainly derived from Gerzean "block figures",¹ and personal habits revealed by depilatory tweezers of Egyptian shape and stone unguent palettes from the early tombs and, later, details of costume such as the penis-sheath and the loin-cloth betoken something deeper than the external relations of commerce.

At the same time even more explicitly Asiatic traits can be detected among the innovations distinguishing the "Metal Age" from the "Neolithic" civilization. Some might indeed have been transmitted via Egypt: stone paint-pots consisting of two or more compartments hollowed out of a stone paralleliped with perforated corners which were especially favoured in the Mesara, are common to Sumer and Egypt in Early Dynastic times.² But Minoan metallurgy is based entirely on Asiatic traditions; the copper-smith cast axe-heads with a hole through the head for shafting in the Mesopotamian manner, the artists treated rosettes and similar figures in the Asiatic, not the Egyptian style.³ The most striking Minoan pot-forms—the pyxis with cylindrical neck and string-hole lid, the jug with cut-away neck and the side-spouted jar have parallels on the Anatolian, not on the African side; the so-called tea-pot with curious spout (Fig. 9) recurs—without the handle—as far away as Tepe Hissar near Damghan.⁴

¹ Childe, *NLMAE*, fig. 29 (incorrectly attributed to Amratian phase).

² Evans, *P. of M.*, II, fig. 20; cf. Childe, *NLMAE*, 198.

³ Matz, *Frühkretische Siegel*, 88.

⁴ Schmidt, *Excavations at Tepe Hissar*, 1931-3, and *Mus. J.*, XXIII, pl. CXVI; cf. Frankfort, "Archæology and the Sumerian Problem" (*O.I.C. Studies*, 4), 57-64. In Anatolia kindred forms were popular under the Hittite Empires (1950-1200 B.C.); *MDOG.*, 75 (1937), 38.

and even Anau in Turkestan. The technique of glaze paint that distinguishes Minoan pottery had been earlier employed by the Tel Halaf potters of North Syria. So in religion the cult of the Double-Axe is foreshadowed by Tel Halaf amulets.¹ The use of engraved bead and button seals as contrasted with carved amulets is a very ancient North Syrian-Iranian practice later adopted in Egypt as in Crete.



FIG. 9. Early Minoan III "teapots" and button seal. After Evans.

How far fresh Anatolian or Syrian colonists—merchants or artisans—joined with Egyptian refugees in founding the Minoan cities is for us a secondary question. Minoan civilization was not brought ready made from Asia nor from Africa, but was an original native creation wherein Sumerian and Egyptian techniques and ideas were blended to form a novel and essentially European whole. The admittedly Nilotic and Oriental elements that we see superadded to the Cretan neolithic culture, may be treated as concrete expressions of the transformation of the island's economy in response to the demands of the great consuming centres that arose, round about 3000 B.C., on the Nile and the Euphrates. In supplying their

¹ *Iraq*, II, fig. 51, 5.

needs the Cretan farmer's sons might find a livelihood in trade and industry; their self-sufficing villages would become commercial cities.

On the basis of the stratigraphical sequence, best preserved at Knossos, Sir Arthur Evans divided the Cretan Bronze Age into the famous "nine Minoan periods" to which he attributed absolute dates on the strength of contacts with the literate centres of civilization. His scheme, columns I and II below, needs some revision after forty-five years. Firstly the chronologies of Egypt and Mesopotamia¹ have been deflated since then. Secondly Evans' division was based mainly on the sequence of ceramic styles observed at Knossos. This turns out to be applicable to other parts of the island only with drastic modifications. The ceramic art, defining Evans' L.M. II, was a "palace style", in vogue only at Knossos. The same thing had happened before. Once it looked as if East Crete had been deserted in M.M. II, since the eggshell fine polychrome pottery defining that phase was lacking. In reality this style too was confined to the palaces of Knossos and Phaestos in Central Crete.² Even in the Mesará, *a fortiori* in East Crete, the M.M. I style was still in fashion as late as 1790 B.C.³ Moreover, at Knossos the Early Minoan period is poorly represented owing to the levelling carried out by later builders; Evans' account had to be filled out by large drafts on material from East Crete and the Mesará. But during E.M. Minoan culture was by no means uniform so that there is a real danger of inflating the sequence by using local styles to represent chronological periods. Thirdly the first reliable synchronisms based on an actual and dated interchange of products are afforded by M.M. II vases in Middle Kingdom Egypt securely dated about 1850 B.C. We have no Early Minoan imports in dated contexts in Egypt or Hither Asia, and, though actual Egyptian manufactures of Old Kingdom and even predynastic type were imported into the island, they occur only without stratigraphical context.⁴ For later periods on the contrary the Egyptian and Syrian evidence justifies the dates given in column IV below. We thus have the following scheme:

¹ e.g. by Sidney Smith, *Alalakh and Chronology*, London, 1940.

² Åberg, *Chron.*, IV, 201 ff.; Pendlebury, *Crete*, XXXI, 300-2.

³ Smith, *A.J.A.*, XLIX (1945), 23-4.

⁴ Pendlebury, *Ægyptiaca*, 20.

Period.	Abbreviation and Subdivision.		Absolute Date B.C.
	Knossos.	East Crete.	
Early	E.M.I		
	E.M.II		
Minoan	E.M.III	E.M.III ?	? 2000
	<u>M.M.I</u>		1850
Middle	M.M.II	<u>M.M.I</u>	
	<u>M.M.III</u>	M.M.III	1700
Minoan			
	L.M.I		1550
Late		L.M.I	
	L.M.II		1450
Minoan			
	L.M.III(A)	L.M.III(A)	1400
		L.H.III(B)	1300
		L.H.III(C)	1200

No attempt can be made here to evoke in a few pages an adequate picture of Minoan civilization. We must content ourselves with a brief outline of the economic development and some reference to the industrial products that are relevant for comparative purposes.

As in neolithic times the foundations of Minoan economy were fishing, the breeding of cattle, goats, and pigs (sheep are not osteologically attested till Late Minoan times)¹ and the cultivation of unidentified cereals together with olives and other fruits. But now specialized craftsmen—jewellers, copper-smiths, lapidaries—must have been supported by the surplus produce of the peasantry. And so in addition to rural hamlets, larger agglomerations of population must be assumed though no Early Minoan township has been fully excavated. Soundings at Vasiliki,² in East Crete and beneath the palace of Knossos give hints of the existence of complexes of rectangular houses of brick and timber on stone foundations, like the contemporary cities of Anatolia and Mainland Greece. But even as late as M.M.I we find the rural population living in isolated house-complexes more reminiscent of a big farm than even a village. A dwelling of that period at Chamaezi³ was an oval walled enclosure, measuring 20 m. by 12 m. and divided by radial

¹ Hazzadakis, *Tylissos à l'époque minoenne* (1921), 77.

² Described in Boyd Hawes, *Gournia*.

³ Evans, *P. of M.*, I, 147.

walls into eleven compartments—exactly like the Iron Age courtyard houses and wheel dwellings of Western Britain!

Similar conclusions might be drawn from the graves. The standard Minoan burial practice at all periods was collective interment in a family or communal ossuary used for many generations. This practice, foreign to Egypt, Sumer, and the Anatolian plateau, was current all round the Mediterranean, going back to "Mesolithic" times among the troglodyte Natufians of Palestine.¹ In the Minoan ossuaries the bones are generally lying in the utmost disorder. The dislocated condition of the skeletons, which has been observed in collective tombs farther west too, has been taken as evidence of secondary burial; the remains would have been deposited in a temporary resting place until the flesh had decayed. Xanthudides'² careful studies of the Mesará burials have, however, shown that the disordered condition of the bones was due in the main to disturbances by those undertaking later interments who showed little respect to the former occupants of the tomb in making room for a fresh interment. The bodies had generally been placed on the floor of the tomb in the contracted attitude. Similarly traces of fire, sometimes noted on the bones, are due to ritual or purificatory fires kindled within the ossuary rather than to cremation.

The ossuaries themselves may be natural caves (E.M.I to M.M.I), rectangular stone chambers, imitating two-roomed houses, or circular enclosures commonly termed tholoi. In the Mesará the tholoi vary in internal diameter from 4.10 to 13 m. and are entered through a low doorway, formed of two megalithic uprights supporting a massive lintel and often entered from a small walled enclosure. The walls are from 1.8 to 2.5 m. thick and the inner courses oversail one another as if the whole had been roofed with a corbelled vault on the principle employed in the Cycladic tomb illustrated in Fig. 25, 1. While it is hard to believe that a space 30 or 40 feet across could really have been spanned by a false dome, the smaller chambers certainly do deserve the name of tholoi, or "vaulted tombs". In an early example at Krasi³ in East Crete, 4.2 m. in diameter, the corpses must, as in the Cyclades and Attica (pp. 52, 69), have

¹ Garrod, *The Stone Age of Mt. Carmel*, I, 14.

² Xanthudides and Droop, *Vaulted Tombs of the Mesará*.

³ *A.A.*, 1929, 103.

been introduced through the roof, since the door, only 0.5 m. high, was completely blocked by an accumulation of bones and offerings; the "door" would in fact be purely symbolic as in Egyptian *mastabas* and some British long barrows.

Evans has compared the Cretan tholoi to Libyan and Nubian closed tombs of later date, but Mallowan, followed by Peake, would find the prototypes of the Minoan tholoi in circular brick constructions of unknown, but certainly non-sepulchral, use which he had discovered in the chalcolithic Tel Halaf township at Arpachiya in Assyria that goes back at least far into the fourth millennium B.C.¹ By that date the device of corbelling was certainly well understood in Hither Asia, but it is not attested in Egypt before the Second or Third Dynasty. In fact, the Minoan tholoi, like the contemporary rectangular ossuaries, may be just imitations in permanent material of dwellings for the living, since round houses are attested by a model from Phaestos. As the tholos tomb was current also in the Cyclades, pottery and ornaments of Cycladic character were abundant in the early tholos at Krasi, and Cycladic idols occur even in the Mesará tombs, Marinatos seems inclined to think that the type of sepulchre may have been introduced by families from the small islands.

In East Crete (for instance at Mochlos) the house-tombs may be grouped to form small cemeteries such as should correspond to a township where several lineages lived together. Tholoi are more often isolated as if the territorial unit corresponded to a single clan or lineage. But in the Mesará small cemeteries are known—three tholoi and a rectangular ossuary at Koumása, three tholoi at Platanos, etc. Such aggregations imply the association of several kinship groups in a single village, but no actual settlements anterior to Middle Minoan have been yet identified in the vicinity. Both in the Mesará and at Krasi when the tholoi had become congested, accessory chambers were built on to the original mausoleum to receive subsequent interments, mostly of Middle Minoan date. And by M.M.II there developed the practice of excavating in the soft rock sepulchres designed for a single small family—irregular chambers entered by a short passage or antechamber—as attested by the Mavro Speleo cemetery near Knossos.² A

¹ *Iraq.*, II, 20, figs. 13-4.

² *BSA.*, XXVIII (1926-7), 263-296.

small tholos seems to have been built in an excavation in a hillside in the same period. Subterranean chambers became the standard form of tomb in Late Minoan times in Crete as in Mycenæan Greece. But even before the end of Early Minoan, individual burial in small stone cists, in clay coffins (larnakes) and in jars (pithoi) grouped in cemeteries as contrasted with ossuaries, was beginning to compete with ossuary practice, and steadily increased in popularity during later periods. The clay coffins¹ have early parallels both in Mesopotamia and Egypt whereas jar burial is a specifically Anatolian-Syrian rite.

The variety of burial practices coexistent in Early Minoan times, like the variety of ceramic traditions, suggests that the island had been colonized by distinct communities which had not yet fused to form a single people with an homogeneous culture. But they seem to have lived together peaceably, as no fortifications have been found, and as members of a single economic system in view of the uniformities in types of metal tools, stone vases, jewellery, and seals. This system secured and distributed foreign materials, gold, silver, lead, obsidian, marble, and perhaps amber (from the tholos of Porti), Egyptian and Asiatic manufactures such as fayence beads and stone vases that were copied locally and perhaps Cycladic figurines. Individual artisans needed seals (buttons, beads, and prisms) that might bear scenes symbolic of their craft; merchants stamped therewith bales of goods exported to Asine and other mainland ports. But no regular system of writing and ciphering was yet needed nor publicly sanctioned for correspondence or accounts. Though sepulchral furniture discloses considerable personal wealth, neither monumental private tombs, palaces, nor temples indicate concentration of wealth in the hands of capitalists human or divine. Cult was conducted in rustic sanctuaries and grottoes. Its symbols—stone figurines imported from the Cyclades or imitating predynastic Egyptian block figures, phalli² and model horns of consecration³ as in Anatolia, dove-pendants⁴ as in the Cyclades and Assyria, and votive double-axes⁵ of copper and lead

¹ *Mân*, XXIX, 1929, 18.

² Koumása, tholos X.

³ Mochlos, E.M.I. (*P. of M.*, I, 57).

⁴ Mochlos (*ibid.*, 102); cf. *Iraq*, II, fig. 51, 7.

⁵ Mochlos (*P. of M.*, I, 101).

—while foreshadowing the distinctive apparatus of later Minoan ritual, still appear in forms appropriate to domestic worship.

In Middle Minoan times power and wealth began to be concentrated in the hands of dynasts residing in Central Crete and combining political and religious authority. Palaces that were also temples, factories, and warehouses were



FIG. 10. The Minoan "Mother Goddess" and (left) Horns of Consecration, from a sealing. After Evans.

erected at Mallia, Knossos, and other sites. Specialization invades the domain of domestic industry. The potters' wheel, symbolizing the industrialization of the ceramic art, is attested from M.M.I. The wheel itself was a large clay disc which itinerant potters could carry about with them as they do to-day.¹ Wheeled vehicles are first represented at the same period by a model four-wheeled cart from Palaikastro.² They could hardly be serviceable without roads maintained by some authority with more than local jurisdiction. And in fact during Middle Minoan times the divergent local traditions that had persisted throughout the preceding period were gradually fused until Crete came to enjoy a single civilization. But the distinction between province and metropolis becomes prominent. The provincial potters of Eastern Crete could not compete with the experts employed in the palaces of Knossos or Phaestos in turning out polychrome ware of eggshell thinness.

¹ *Essays in Aegean Archaeology, presented to Sir Arthur Evans* (Oxford, 1927), III-128.

² *BSA, Supplementary Volume, Palaikastro*, 1923, 17.

The priest-kings organized more effectively trade with Egypt, Melos, peninsular Greece, and other foreign lands where even the eggshell pottery has been discovered—in Egypt in a Twelfth Dynasty tomb sealed some time after 1850 B.C. And this commerce must have substantially augmented their real wealth. For its administration a civil service would be required. And the perpetual corporation thus instituted needed a socially sanctioned system of keeping records and accounts. In fact a conventional script of an ideographic type was developed during M.M.I and used for accountancy. The idea was presumably borrowed from the Minoans' correspondents in Egypt or Syria where writing had been in use for a thousand years. The actual conventions were local, though several signs have Egyptian analogues and the numeral forms are reminiscent of early Sumerian, while the use of a clay tablet as a vehicle of writing is an Asiatic habit.

Increase of wealth is usually accompanied by increase of population. The palace of Knossos was surrounded with an extensive town of two-storied houses, known not from actual excavation so much as from a mosaic attributed to M.M.IIb. The native population would be swelled by the immigration of craftsmen attracted by the wealth of Minoan courts and towns. So professional potters from Asia may have introduced the potters' wheel and trained native apprentices in its use. And other specialists such as fresco-painters may have arrived to minister to courtly desires for refinement. But if new arts were introduced by immigrants, the Minoan schools these founded were original and creative both in devising fresh techniques and in creating a new naturalistic style that owed little to Oriental models. In beholding the charming scenes of games and processions, animals and fishes, flowers and trees that adorned the Middle Minoan II and III palaces and houses we breathe already a European atmosphere.¹

The development of Minoan civilization was interrupted by catastrophes which may be taken to mark the end of the phases termed M.M.II, M.M.III and L.M.I. The disaster in each case seems due to earthquake and was followed by reconstruction of the ruined palaces. But about 1400 B.C. hostile forces razed the palace of Minos to the ground. The hegemony in the Ægean had passed to Mycenæ on the Mainland

¹ Spearing, *Childhood of Art*, 230, 353.

(p. 76). But urban civilization still flourished in Crete for two centuries. Gournia, for instance, in East Crete, now covered six acres and comprised some sixty houses. And the richly furnished Late Minoan cemeteries comprising corbelled tombs (partially subterranean), rock-hewn chamber tombs, pit-caves, and shaft-graves as well as larnax burials, remained in use in places even into the Iron Age.¹

This inadequate sketch must be supplemented by a brief reference to certain industrial products that will be cited in later chapters dealing with less progressive parts of Europe. Tools and weapons are particularly relevant in this context. Obsidian was used for knives, sickle-teeth, and arrow-heads (including the transverse type). Fine hollow-based specimens are found even in Late Minoan tombs. At least in Early Minoan times stone was used even for axe-heads; notable is a "jadeite" celt from the tholos of Kalathiana in the Mesará. But copper was being used for celts even in the latest "neolithic" phase² and soon ousted stone. Copper ore exists in East Crete³ and may have been exploited in Early Minoan times. The addition of tin to copper to facilitate casting is attested as early as M.M.I, though the standard alloy containing 10 per cent of tin was not firmly established till M.M.III. Bronze was known to the Sumerians before 2500 B.C. and knowledge of its qualities was probably transmitted thence to the Ægean via Anatolia (p. 38). But the Minoans' demand for tin may ultimately have been supplied from lodes in Etruria, Cornwall, or Bohemia, since in each country we shall encounter ambiguous hints of contact with the Ægean world (pp. 116, 235, 328). Iron is represented by a ring from a Middle Minoan tomb in the Mavro Speleo cemetery, but was not used industrially before 1200 B.C.

For axes the flat celt of the copper age did not lead, as in Cis-alpine Europe, to flanged and socketed forms, but was superseded by the shaft-hole axe (Fig. 11, 1) that had been current from prehistoric times in Mesopotamia. After Middle Minoan III the single-bladed axe was ousted in Crete by the two-edged variety—the Double Axe—known also to the Sumerians and elevated to become a fetish or symbol of

¹ *Arch.*, LIX, and LXV, 1-94; Pendlebury, *Crete*, 195, 242, 306.

² *P. of M.*, II, 14.

³ Mosso, *Dawn of Mediterranean Civilization* (1910), 290.

divine power by E.M.II. Double-adzes too were used by the Knossian workmen by the beginning of L.M.I.¹ Finally,

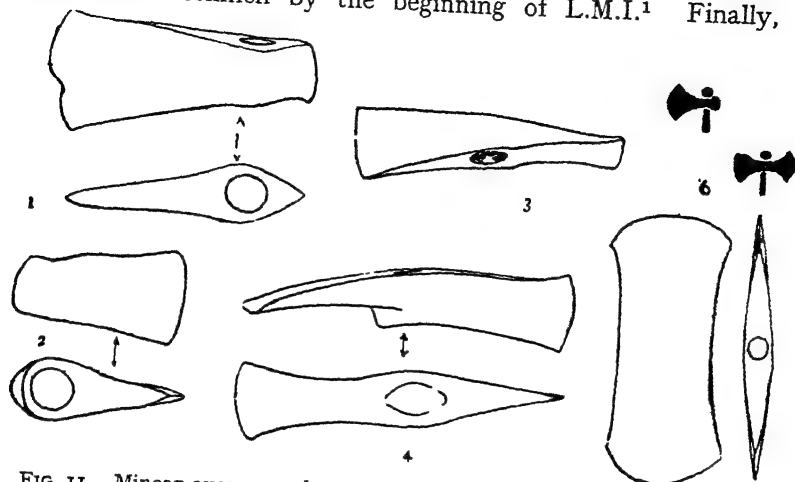


FIG. 11. Minoan axes, axe-adzes and double axe (5), and seal impressions (6).
After Evans and M. A.

the axe-adze that may be regarded as a combination of two types of axe used by the Sumerians, is represented by a gold

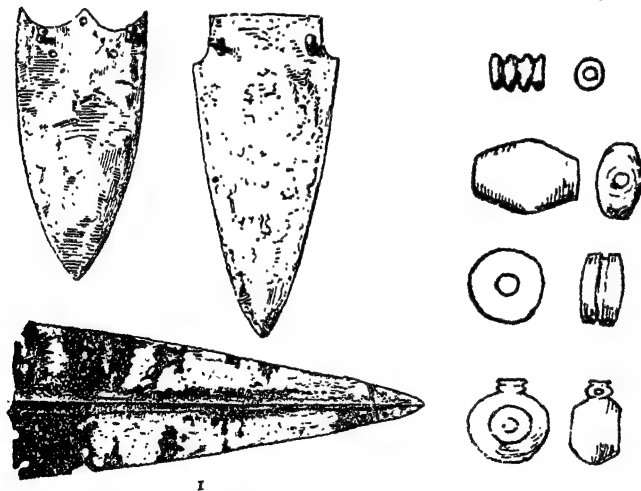


FIG. 12. 1, Early Minoan daggers (1); 2, Stone beads (2). After Evans.

model attributed to E.M.II² and actual specimens from the farmhouse at Chamaizi (Fig. 11, 3) attributed to M.M.I and

¹ *P. of M.*, II, 629, fig. 392.

² *P. of M.*, I, 193, n. 3.

then the standard Minoan form (Fig. 11, 4) from M.M.II on. Heavy perforated hammers of metal rectangular in cross section are reported as early as M.M.II¹ and carpenters' saws are attested as early as wheeled vehicles, by M.M.I.² But elongated flat celts served as chisels and no sickles older than L.M.III³ survive.

Early Minoan daggers are triangular or provided with a very short wide tang (Fig. 12, 1), and sometimes given longitudinal rigidity by means of a midrib cast on both faces. They were attached with small rivets, sometimes of silver, to their bone or wooden hilts that were surmounted by globular or hemispherical pommels⁴ of stone or ivory, laterally perforated for transverse rivets to hold them in position. During Middle Minoan times the blades, still either flat or strengthened with a midrib, were elongated and assume an ogival form (Fig. 13).

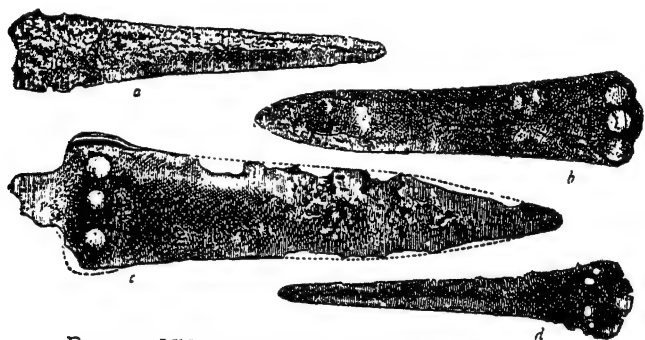


FIG. 13. Middle Minoan I-II daggers. After Evans.

Some have a flat tang, like Asiatic daggers, and the rivets are large. But the palace of Mallia has yielded a genuine rapier, attributed to M.M.I⁵ which is shown by its elongated pommel and its attachment to the hilt to be a development of the Sumerian series illustrated in the Royal Tombs of Ur. And in M.M.III the great rapiers from the Shaft Graves of Mycenæ (Fig. 14, 1-3) are clearly elongations, to the surprising length of 93 cm., of the native types of Fig. 13. The pommels are improvements on the Early Minoan form approximating to Fig. 21, 3, while the hilt-plate of type 1 preserves a reminiscence

¹ From Hagia Triada and Praisos.

² *P. of M.*, IV, 2, 797.

³ *BSA.*, Palaikastro, pl. XXV; *JRAI.*, LXXIV, 17.

⁴ Xanthudides and Droop, pls. XXIII, LIV.

⁵ *P. of M.*, II, 272; cf. Childs, *NLMAE.*, pl. XVIIIa.

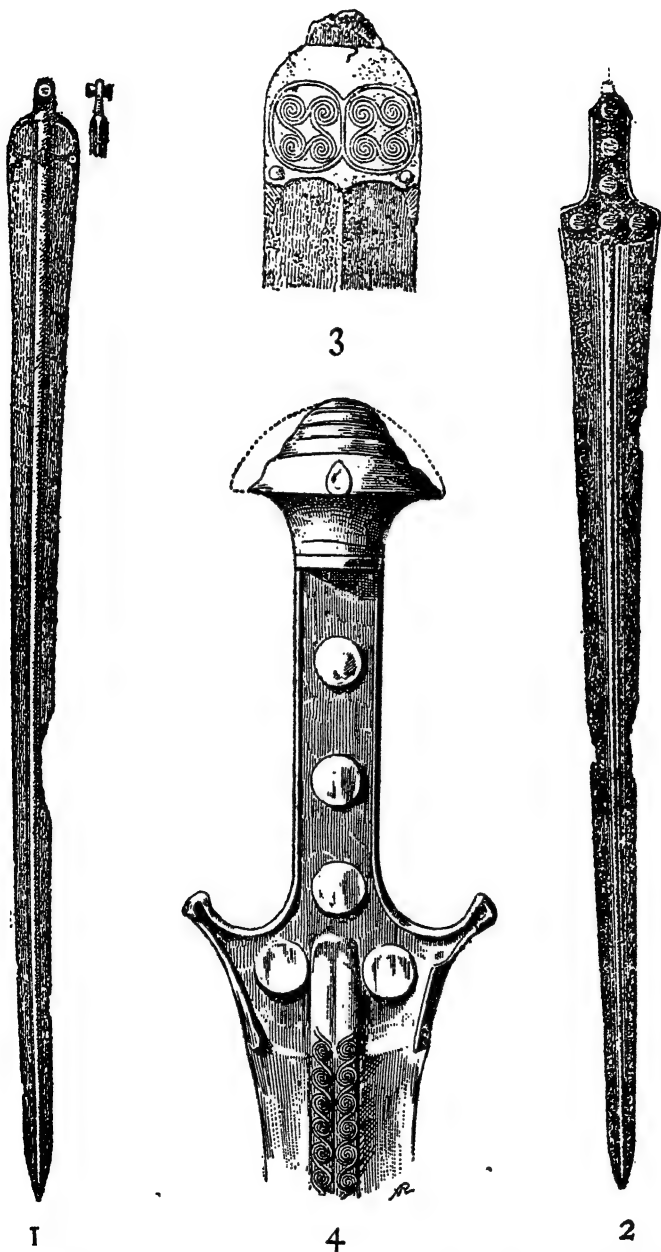


FIG. 14. M.M.III rapiers (Mycenæ) and L.M.I hilt (Crete). After Evans.

handle turned up at Nienhagen in Saxo-Thuringia apparently in an Early Bronze Age cemetery.

Minoan costume, like the Egyptian, did not require fastening with pins so that, apart from a few hairpins, these toilet accessories, so common in Mesopotamian, Anatolian, and Central European graves, are missing in Bronze Age Crete. On the other hand the Minoans, like the Egyptians, Sumerians,

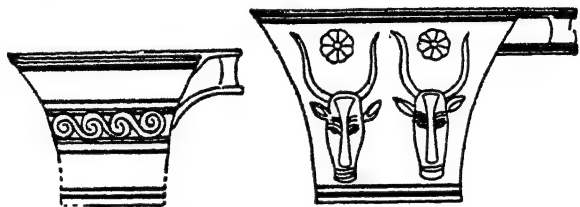


FIG. 16. Egyptian representations of Vapheio cups.

and Indians were skilled at shaping and perforating hard stones for beads. Rock crystal and carnelian were used from Early Minoan times as well as ivory and fayence. Two amorphous lumps from the tholos of Porti have been identified as amber, but Evans has questioned this diagnosis.¹ By L.M.I amber was certainly reaching Crete regularly from the Baltic, and a gold bound amber disc from the cemetery of Knossos (L.M.II)² is almost identical with one found in a Middle Bronze Age grave in Wiltshire. Segmented beads of fayence, copying stone beads that go back to E.M.II³ (Fig. 12, 2a) were being manufactured in Crete from M.M.III. Similar beads have turned up as imports in the Danube valley, Spain, Poland and England, but these seem to be of Egyptian manufacture (p. 334, below). Stone hammer-beads occur even in the E.M. ossuaries of the Mesará.⁴

¹ Xanthudides and Droop, 69.

² *Arch.*, LXV, 42.

³ *U. of Penns., Anthropol. Publ.*, III, 3, 184.

⁴ Xanthudides and Droop, pl. XXXII, 548.

CHAPTER III

ANATOLIA THE ROYAL ROAD TO THE ÆGEAN

IN the fifth century the Royal Road from Mesopotamia to the Ægean, led not to the Levantine coasts alone, but on across the plateau of Anatolia—a promontory of Asia thrust out towards Europe. Here ran the route along which Persian armies marched to impose Oriental culture on Greece, along which diplomatists, scientists, and merchants travelled to transmit more peacefully and successfully Babylonian ideas to the young Ionian States. Two millennia earlier the plateau was already a bridge across which merchant caravans could transport products of Mesopotamian civilization towards barbaric Europe; the Taurus' wealth in ores had induced colonies of Assyrian merchants to settle in Cappadocia and maintain continuous communications with the cities on the Tigris and Euphrates. But earlier still the riverine cities' demands had been transforming native peasant villages into little townships, inducing them to sacrifice self-sufficiency for the profits of industry and trade. Indeed, when the archæological record, as laid bare by recent excavations in Turkey, begins, the transformation is already far advanced; in the lowest levels yet reached copper is already competing with stone and bone.

This native Copper Age culture, permeated with more Eastern traits, extends from the Taurus westward to the shores of the Hellespont. Over this vast area close inspection of the record reveals, embraced within a general unity, local divergencies till in North-Western Anatolia the material has an almost European aspect. The earliest settlement of this area is represented by pottery found on virgin soil at Kum Tepe ¹ in the Troad. Notable are pedestalled bowls of a type, found in the earliest strata at Alişar on the plateau and then in the Balkans, and stroke-burnished ware which recurs on Samos and often in Europe. The sequel is seen at Hissarlik, the ancient Troy, a key position on the Hellespont commanding at once sea-traffic up the straits and a land route's crossing to Europe. There Heinrich Schliemann last century distinguished seven superimposed prehistoric cities, but left a multitude of crucial issues for more scientific excavations, still unpublished

¹ *AJA.*, XXXIX, 33.

in 1946, to settle. It will simplify the subsequent exposition if we summarize here in tabular form the cultural sequence as disclosed in the latest provisional reports.¹

Troy VIIa	the "Homeric" city, dated by Mycenæan imports to the early twelfth and late thirteenth centuries B.C.
Troy VI	destroyed by an earthquake and similarly dated between 1500 and 1300 B.C.
Troy V	represented in places by 2.5 m. of deposit and divisible into four or five phases.
Troy IV	with 2 to 5 phases and 1.85 m. deposit.
Troy III	1.85 m. deposit.
Troy II	1.60 m. deposit; reconstructions of the enclosing wall mark three phases, a, b, and c, but two or three additional layers, the latest marking a terrific conflagration, are recognizable above the IIc floors.
Troy I	4.4 m. of deposit and four main phases, each subdivisible.

Apart from sheer dead-reckoning, clues to the absolute age of the deeper layers are afforded by the following considerations. In Troy VI the oldest dated sherds imported from Greece belong to L.H.I and L.M.II, but in lower strata of the same city the local "Minyan" ware is parallel to that of M.H. Greece and begins only in Vd. From Va down to Id Early Helladic pottery was being imported which in most of Greece went out of fashion about 1850 B.C.² On the other hand a "red cross bowl" (p. 46), typical of Troy V, was found in the stratified tell near Mersin, Cilicia in the lowest "Imperial Hittite" stratum that should begin about 1450 B.C.³ while grey ware like Minyan is commonest in the contemporary layer at the Hittite capital, Boghaz Keui.⁴ At Gözlu Kale, near Tarsus, the variant of Fig. 19, 5, that is characteristic of Troy III, occurred in a layer, dated by impressions of "Cappadocian" seals between 1970 and 1870.⁵ In substantially earlier levels at Alishar a form of goblet not found below Troy IIb⁶ gives a limiting date for that phase before, say, 2200 B.C. (These goblets and other Trojan pot forms reproduce gold and silver vessels actually found at Alaca Höyük and elsewhere which, being objects of trade, would be rapidly diffused.) So it is hardly possible to place the beginning

¹ *AJA.*, XLI (1937), 563-6, 595.

² *AJA.*, XLI (1937), 563-6, 595; *BSA.*, XXXVII, 10-12.

³ *LA.A.I.*, XXVI, 132; this date is too low.

⁴ *MDOG.*, LXXV (1937), 38.

⁵ *AJA.*, XLIV, 65.

⁶ Bittel, "Prähistorische Forschungen in Kleinasien" (*Istanbuler Forschungen*, 1934), 18-20; van der Osten, *OIC. Publications*, XXVIII-XXX, 1937.

of Troy II much after 2500 and Troy I might take us back easily to 2750 B.C. But Blegen's much higher dates¹ really involve a circular argument.

Troy I was already a little township, girt by a massive stone wall² and apparently ruled by a chief whose palace was a long rectangular hall, 12.8 m. long by 5.4 m. wide, entered through a porch at the west end.³ But pending the full publication of recent discoveries a more complete and accurate picture of the earliest civilization of North-Western Anatolia may be obtained by supplementing the data being gleaned at Troy by those from the cemetery of Yortan in Mysia and above all from the five superimposed townships of Thermi⁴ in Lesbos of which towns I to IV are parallel to Troy I.

Even the earliest settlement consisted of clusters of two-roomed houses (often of the long rectangular plan), closely juxtaposed along well-defined but crooked and narrow streets. The mud-brick walls rested on foundations of stones, sometimes (in Thermi I and IV and Troy I) laid not horizontally but obliquely in herring-bone formation, an arrangement often employed in the brick architecture of Early Dynastic Sumer. And as in Mesopotamia the doors were pivoted on stone sockets. Some houses in Thermi were provided with low domed ovens of clay only 3 ft. high. Especially in Thermi III pits (bothroi) were often dug in the house floors and carefully lined with clay.⁵

Anatolian economy rested on the cultivation of wheats,⁶ barley, millet, and presumably vegetables, perhaps also of vines and fruit-trees, the breeding of cattle, sheep, goats, and pigs, and fishing with hook and line or with nets. Axes and rare adzes were made from pebbles ground and polished and also from stags' antlers pierced for a shaft-hole, knives, and sickle-teeth from flint blades simply trimmed. Stone battle-axes with cylindrical butts occur already in Thermi I or II and reveal the local ancestry of ornate weapons like Fig. 21, 1, but stone battle axes had been used in the IVth millennium in Mesopotamia

¹ Milošević, *BSA.*, XLIV (1949), 258-306.

² *AJA.*, XLI, 567.

³ *AJA.*, XLI, 18; the plan is essentially Asiatic, *AJA.*, XLVIII, 342 ff.

⁴ Lamb, *Excavations at Thermi in Lesbos*.

⁵ On bothroi in general, see *JHS.*, LV (1935), 1-19.

⁶ *Einkorn* is attested, though perhaps later, at Troy and Kusura (*Arch.*, LXXXVI, 10), emmer only at Thermi, where there are some traces of vines.

though known only from clay models of the al'Ubaid culture.¹ Bone splinters, pointed at both ends, served as arrow-heads, while the armoury comprised also sling-stones and maces with spheroid stone heads.

But trade already brought metal even to Lesbos, and at Thermi I and Troy I there were specialized smiths available to work it. A crucible was found on virgin soil at Thermi, and small metal pins and trinkets were comparatively common at all levels. Most were made from unalloyed copper, but a pin from Thermi II contained as much as 13 per cent of tin, and a bracelet of this rare metal was found in town IV. Indeed by the time of Thermi II and III metal was common enough for large implements to be left lying about for modern excavators to find. Their discoveries include chisels with rounded butts as in Egypt and in Sumer in Jemdet Nasr times, flat axes and an axe with the sides hammered up to form low flanges,² and flat-tanged daggers like Fig. 20, 2-4, but still without the prominent midrib. Though the shaft-hole axe so common in Mesopotamia is not represented in West Anatolian metal work,³ the daggers and pins suffice to show that the local smiths were trained in the Asiatic rather than the Nilotic school of metallurgy.⁴

Trade was not however exclusively with Asia nor confined to metal and ores. Emery and marble vases were imported from the Cyclades, while copper bird-headed pins from Thermi I and polished bone tubes (like Fig. 27, 1) from III and IV are further reflections of intercourse with Ægean islands.

Despite the specialization of the metallurgical industry and the ramifications of commerce, pot-making was not sufficiently industrialized for the use of the wheel. The self-coloured, burnished vases, varying in hue from deep black to brick red and often copying gourd or leather vessels, are representative of a tradition common to the whole of Anatolia. A conspicuous peculiarity throughout the province is the popularity of genuine handles in addition to simple lugs. Forms distinctive of West Anatolia are bowls with lugs growing from the inverted rims

¹ JNES., II (1943), 150, pl. XVIII f., 5.

² As also at Ahlatlibel, near Ankara.

³ There is a copper battle-axe from Yortan in the Louvre and two shaft-hole axes rather like Fig. 11, 1, from the Copper Age cemetery at Ahlatlibel, near Ankara (*Türk Tarih Arkeologya ve Etnografya Dergisi*, II (1934), 90; *Archiv. f. Orientforschung*, XI (1936), 47, fig. 7.

⁴ For the distinction see Childe, *Bronze Age*.

(Fig. 17, 1), jugs with cut-away necks (Fig. 17, 2-3), tripod vessels, and collared pyxides with string-hole lugs and lids (Fig. 17, 4).¹ Significant changes in form, documented by the stratigraphy of Thermi, are the expansion of the ends of the

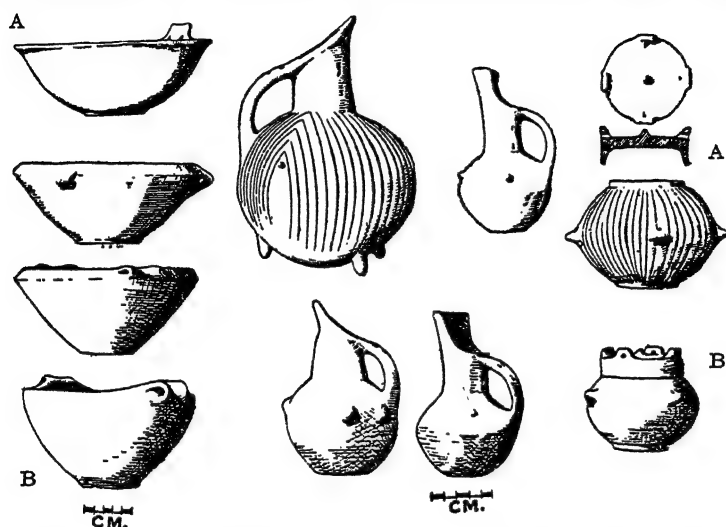


FIG. 17. Pottery from Thermi I-II (A) and III-IV (B). After W. Lamb, *BSA.*, XXX.

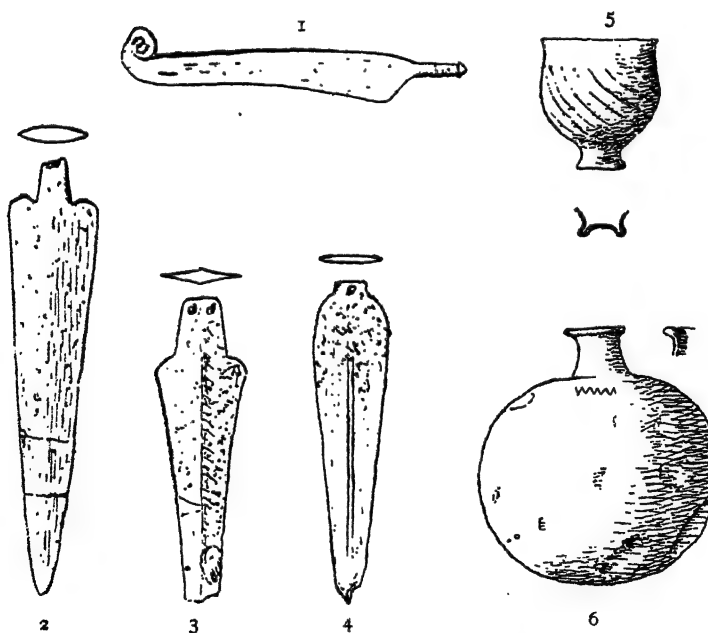
tubular lugs on the bowls to the "horned lugs" in town III and the contemporary transformation of tripod legs into models of human feet. Decoration was effected by means of bosses, ribs, burnished grooves, and incisions and, later and at Yortan, thin white paint, the patterns being always rectilinear.

Spinning and weaving would be domestic arts too. Their importance is attested by the numbers of spindle-whorls, often decorated. The weaver may have used perforated arcs of clay up to 9 cm. in length, represented in Thermi III, that seem to be forerunners of the narrower crescentic loom-weights so common in the Hittite levels of Kusura and Alişar.²

The domestic fertility cults of a superstitious peasantry may be illustrated by numerous female figurines of stone and

¹ Bowls on a tall hollow pedestal are missing from Troy, Yortan, and Thermi, but have been found at Kum Tepe, which may be earlier than Thermi and in the earliest strata at Alişar, van der Osten, *The Alishar Hüyük*, OIP., XXVIII, 67; *AJA.*, XXXIX, 33 f.

² *Arch.*, LXXXVI, 35, fig. 15; *Alishar*, fig. 30.

FIG. 19. Pottery from Troy II ($\frac{1}{2}$).FIG. 20. Knife ($\frac{1}{2}$) and daggers ($\frac{1}{2}$) and gold vessels ($\frac{1}{2}$), Troy II. 2-6 from Treasure A. Museum f. Vorgeschichte, Berlin.

ig. 19, 2 and 6), jugs with flaring mouths (Fig. 19, 4), and various two-handled goblets (Fig. 19, 5). But these appear already hand-made in phase IIa and are merely exaggerated expressions of tendencies inherent in the earlier and more generalized Anatolian tradition. The representation of the "Mother Goddess" on the face-urns is significantly like that on the handles of early Sumerian funerary jars¹; but the

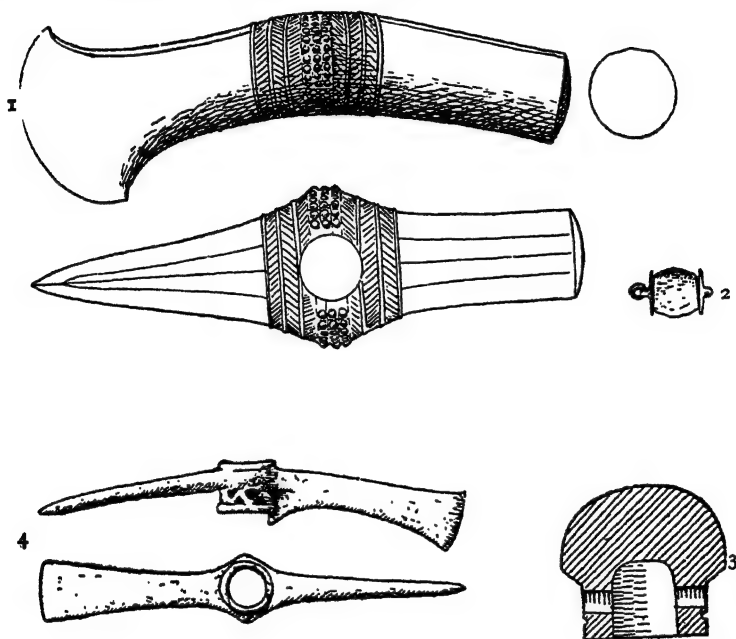


FIG. 21. Battle axe (1), gold-capped bead (2) and crystal pommel (3). From Treasure L, and stray axe-adze (4), Museum f. Vorgeschichte, Berlin.

convention is already foreshadowed in the stele from Troy I. Side-spouted jugs, multiple vessels, jugs with double necks, zoomorphic vases are essentially Anatolian and not confined to Troy II. Improvements in the preparation of the clay and firing, probably introduced at the same time as the wheel, allowed the potter to produce harder, paler, and less porous vessels. But to preserve the effect of the old self-coloured vases, their surfaces were normally covered with a ferruginous wash that turns red on firing (red wash ware)—a device popular

¹ Childe, *NLMAE.*, fig. 75.

at Alişar and farther east, and employed even in the Middle Danube basin

Despite the abundance of metal, stone, flint, obsidian, bone, and antler were still freely and almost predominantly employed for axes, battle-axes, agricultural implements, knives, awls, pins, and combs. The battle-axes carry on the tradition of Troy I, but include some superbly polished weapons of semi-precious stones (Fig. 21, 1) (from Treasure L) that must be ceremonial.

The jewellery from the hoards not only demonstrates the wealth of Troy, but the divergent ramifications of its commerce. Many items are specifically eastern; the earrings and lock-rings with flattened ends, the spiral filagree work (Fig. 22, 3), the gold disc beads, etc., may be regarded as Sumerian and the technique of the knot-headed pin¹ was known there as in predynastic Egypt.¹ Pins with double spiral heads (of which Fig. 22, 3, is a glorified version) are found all across Anatolia and Iran to India and Anau.² A "spear-head" identical with the Cycladic specimen of Fig. 23, 1, from Treasure A, belongs to a family represented also in Central Anatolia, Cyprus, and Iran.³ Earrings like Fig. 22, 1, are worn by foreign dancing girls depicted on an Eighteenth Dynasty tomb-painting.⁴ At the same time as we shall see, so many types familiar at Troy recur in South-Eastern and Central Europe as to give the impression that Trojan tin came from Bohemia and their copper perhaps from Bulgaria. On the other hand, bossed bone plaques, like the Sicilian specimen shown in Fig. III and rather more distant British analogies to the earrings and twisted armlets from Treasure A may indicate exploitation of western lodes. The bossed bone may belong to Troy III or IV rather than II.⁵ Ring-pendants of stone, recurring in gold in Wallachia and Transylvania, might disclose one source of Trojan gold. Copies in East Prussia and Sweden may be counterparts of the amber beads from Treasure L. If Troadic trade was founded to satisfy the Oriental demands for metal, Troy II was itself a centre whose demands influenced our Continent. Yet Trojan merchants and officials seem to have managed their business

¹ Ibid., p. 193; Brunton, *Badarian Civilization*, pl. LIV, 9.

² *LAAA.*, XXIII, 119.

³ Arik, *Les Fouilles de Alaca Höyük*, 1935, pl. CCLXXV; Schaeffer, *Missions en Chypre*, 42 ff.; Schmidt, *Tepe Hissar*.

⁴ Aberg, *Chron.*, IV, 11.

⁵ *Marburger Studien*, I, 12; but the gold prototypes from Alaca Höyük seem to belong to the IIIrd millennium.

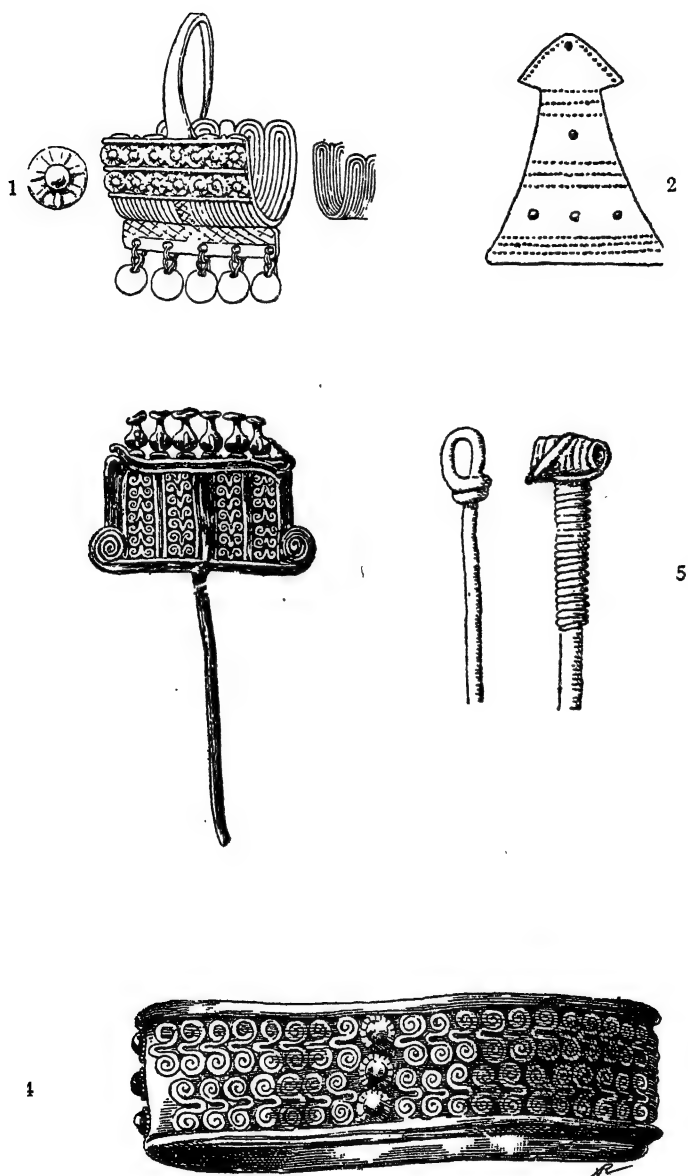


FIG. 22. Gold earring and pendant from Treasure A, pin from Treasure D, bracelet from Treasure F, and knot-headed pins (†). Museum f. Vorgeschichte, Berlin.

without writing. They certainly did not, like the Cretans, adopt the use of stone seals. But they did copy Asiatic stamp seals in clay.

The old native fertility cult continued without any notable changes, but the figurines, now predominantly of stone, are all highly conventionalized (Fig. 8, 15), and the phalli are made of stone.

For the development of European culture Troy II represents the most significant moment in the West Anatolian prehistory, but not of course its end. After the sack of Troy II important settlements termed Troy III, IV, and V were built on the site. All lasted long enough to need several local reconstructions, all were urban in the sense that they comprised specialized potters and smiths and relied upon trade, and in all the pottery attests unbroken continuity of culture. Face-urns and two-handled goblets were still being made in red wash ware in towns III and IV, and the fabric at least remained in vogue also in V. But in the latter township the wash was sometimes used as a paint, but only to produce a simple cross on the insides of shallow bowls. Similarly pottery termed Early Helladic and bone tubes of Cycladic type, like Fig. 27, 1, were still being imported even in the earlier phases of Troy V.¹ In this town and also in IV, the American expedition has uncovered the ruins of domed ovens.

In the lowest layers of Troy VI a new pot-fabric emerges either through autochthonous developments or through fresh stimuli from without. It is a fine grey ware owing its colour to the reduction of the iron oxides in the selected clay by controlled firing in a kiln—what is termed Minyan ware—and is accompanied by an oxidized red variant. These are the characteristic native wares of Troy VI and VII too.

With the sixth town Troy once more attained the full dignity of a city. It was surrounded with a new stone wall enclosing an area of 15,000 to 18,000 sq. metres or about 4 acres. Trade across the Ægean is attested by the importation of Minoan-Mycenæan pottery of L.M.I to L.M.IIIa styles, and these imports fix the age of the settlement. From Troy VI comes the earliest osteological evidence for horses in the Troad,² while bronze sickles give the first indication of the use of

¹ *AJA.*, XXXVIII (1934), 229 ff.; but cf. LII (1948), 120.

² *AJA.*, XLI, 595.

metal in husbandry. The dead were now cremated, their ashes enclosed in urns of Minyan ware and buried in a cemetery outside the city walls.¹ The cemetery of Troy VI was in fact an urnfield like those that begin in the Middle Bronze Age of Central Europe.

Troy VI was not, as had generally been thought, the city sacked by Agamemnon and his Achæans.² It was destroyed by an earthquake but promptly rebuilt on a smaller scale by the old inhabitants. Imported Mycenæan sherds show that the reconstructed city, VIIa, flourished in the thirteenth and well into the twelfth century B.C. Its end was violent, and the date inferred from the pottery agrees remarkably well with the Greek tradition of the Trojan war. Thereafter European barbarians usurped the throne of Priam. In the squalid town of Troy VIIc socketed axes of Late Bronze Age form, cast by Central European methods, and fluted and wart-ornamented wares allied to the Danubian Lausitz fabric leave no doubt as to the origin of these invaders. On the other hand, the continued production of wheel-made vases in the old Minyan technique and of native form demonstrates the persistence of the old Anatolian population in alliance with or subjection to the Central European intruders.

Other points in Troy may be documented from Dörpfeld *Troja und Ilion*, Berlin, 1902, and H. Schmidt, *Heinrich Schliemann's Sammlung Trojanischer Altertümer*, K. Museen zu Berlin, 1902.

¹ *AJA.*, XXXIX, 26.

² *AJA.*, XLI, 42.

CHAPTER IV

MARITIME CIVILIZATION IN THE CYCLADES

THE Cyclades are scattered across the Ægean, remnants of a land-bridge between Anatolia and Greece affording a passage for cultural ideas from Asia to Europe. To mere food-gatherers or self-sufficing peasants, the islands, often small and barren, offered no attractions. But to mariners crossing from Asia to Europe they offer convenient halting places and lairs to any pirates who might wish to prey on more peaceful voyagers. Moreover they contain raw materials of the sort needed by urban civilizations—copper (Paros and Siphnos), obsidian (Melos), marble (Paros and others), emery (Naxos). Accordingly while unoccupied by neolithic men, the Cyclades were early colonized by communities that could find a livelihood in commerce and perhaps in piracy too. Such communities must have lived near the shore and presumably in townships. But only at Phylakopi in Melos¹ has a Cycladic settlement been fully explored. There three consecutive townships could be distinguished, preceded by some earlier occupation represented by sherds collected beneath the oldest house-floors. The city has been partially engulfed by the sea, but must have extended well over 4 acres. The first town was apparently unfortified, the second and third girt with strong stone walls, 20 feet thick in the latest phase. Fortified settlements are also known at Chalandriani² on Syros, on Paros³ and elsewhere. But these fortifications seem relatively late. Soon after the foundation of Phylakopi II M.M.Ib polychrome vases were imported from Crete; the city is accordingly hardly older than the twentieth century B.C.; it is frankly Middle Cycladic.

For the remaining islands and for earlier periods we are reduced to estimating the size and stability of the settlements from the cemeteries. Few have been fully explored but they were admittedly extensive. Three on Despotikon comprised 50 to 60 graves each; on Syros one cemetery at Chalandriani

¹ For Phylakopi see *Excavations at Phylakopi in Melos* (Society for Promotion of Hellenic Studies, Supplementary Volume, IV, 1904).

² For tombs on Amorgos and Paros, see Tsountas, *Κυκλαδικα*, in *Εφ. Αρχ.*, 1898; for Syros and Siphnos, *ibid.*, 1899.

³ *A.M.*, XLIII (1917), 10 ff.

was composed of nearly 500 graves, a second of more than 50 ; on Paros, Tsountas mentions nine cemeteries of from 10 to 60 graves. Of course all these burials are not contemporary. While it has been customary to assign most cemeteries to the

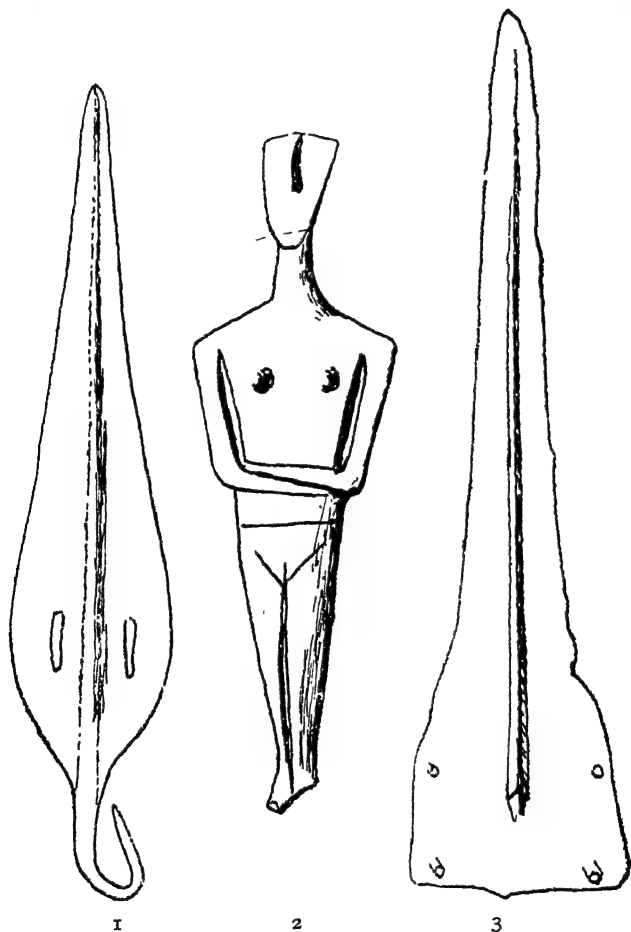


FIG. 23. Tomb-group. Amorgos. ($\frac{1}{2}$.)

Early Cycladic period (before 2000 B.C.), Åberg ¹ has shown that some graves must be Middle or even Late Cycladic. Fortunately Cycladic imports in Egypt, in Crete, at Thermi and Troy, and on Mainland Greece suffice to show that the islands' culture reached its zenith in the third millennium. Marble idols like

¹ *Chronologie*, IV, 71, 84.

Fig. 23, 2, were imported into Crete chiefly during E.M.III, a blade like 23, 1, from the same tomb on Amorgos, was included in treasure A of Troy II ; Cycladic marble vases were used in Thermi I-III, and the bird pins of Thermi I recur on Syros ; a pin with double spiral wire head like Fig. 27, 9, was found in an Early Helladic tomb at Zygouries ; "frying pans" with

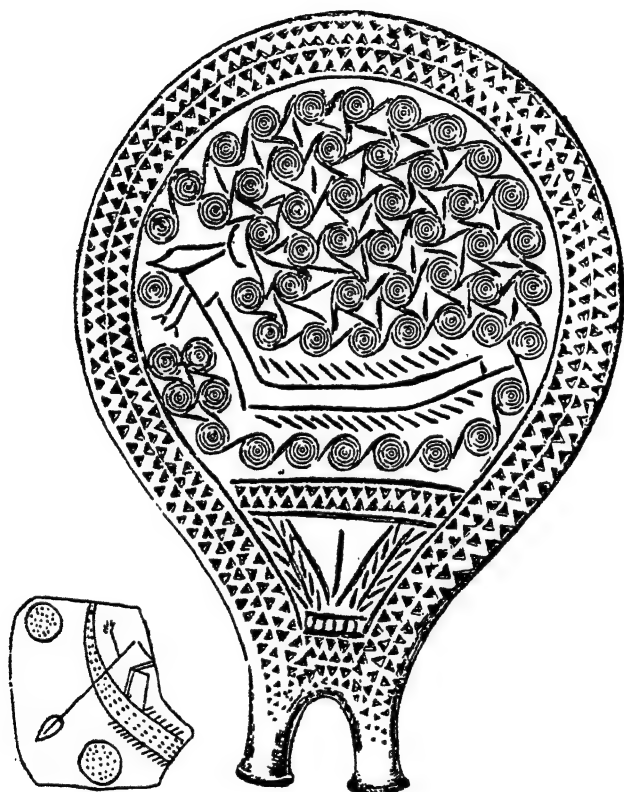


FIG. 24. Cycladic "frying-pan" and sherd showing boat.

spiral decoration like Fig. 24 were found in the oldest Early Helladic township at H. Kosmas in Attica, and in the E.H.III level at Asine ; duck vases (like Fig. 28, 2) were imported into Ægina in Early Helladic times though they continued to reach Eutresis in Boeotia during Middle Helladic I (pp. 68 ff.).

Finally a zoomorphic vase of Parian marble was recovered from a predynastic grave in Egypt.¹

The inference that the density of population on the islands was made possible by trade and manufacture is confirmed by the list of exports just given. And of course that list is by no means exhaustive. Obsidian was quarried on Melos and exported as nuclei or blades to Crete, Mainland Greece, and the other islands. The Cycladic grave goods comprise the products of specialized craftsmen—smiths, jewellers, lapidaries—and prove the use of copper, tin,² lead, silver, and other materials which in some cases must have been imported. The rôle of maritime intercourse is further emphasized by the frequent representation of boats on the vases (Fig. 24).³ But the islanders do not seem to have needed writing for their business transactions and did not even make regular use of seals like the Minoans. The prominence of weapons in the tombs (especially of Amorgos), and the fortification of the settlements may indicate that piracy was already combined with legitimate trade. In any case being dependent on overseas trade, the prosperity of the islands might be expected to decline when that trade was "cornered" by monopolistic princes in Crete and the Troad. A real contraction of population during Middle Minoan II–III and Late Minoan I–II would be perfectly comprehensible. In that case the bulk of our material would really be Early Cycladic.

But this Early Cycladic culture was by no means homogeneous. Culturally the islands fall into a southern and a northern group overlapping only on Naxos.⁴ To the former belong Melos, Amorgos, Despotikon, Paros, and Antiparos; to the Northern Syros, Siphnos, Andros, and also Eubœa. The contrast is revealed in burial practices as well as in grave-goods. In the southern group, though shaft-graves and chamber tombs of uncertain age are plentiful near Phylakopi,⁵ the early graves were normally trapezoid cists. In the oldest cemeteries⁶ (the Pelos group), definitely antedating Phylakopi I, the cists served as ossuaries and contain several skeletons together with vases

¹ Frankfort, *Studies*, II, 103.

² One dagger from Amorgos was of unalloyed copper, but a ring contained 13.5 per cent tin.

³ On Ægean ships see Marinatos in *BCH.*, LVII (1933), 170 ff.

⁴ Åberg, *Chronologie*, IV, 59 f.

⁵ *Phylakopi*, 234–8.

⁶ Pelos in Melos, *BSA.*, III, 40; Antiparos, *JHS.*, V, 48.

like Fig. 28, 1, and "fiddle idols" like Fig. 8, 10-12. The later tombs were individual graves; they contain idols like Fig. 23, 2, marble vases and weapons. On Syros¹ in the northern group rectangular or oval tombs were built in excavations in the hillside and roofed by corbelling (Fig. 25). But these too served as individual graves, and the single body was introduced through the roof. As at Krasi in Crete, the door (only .50 m. square) was merely a ritual element. In Eubœa²

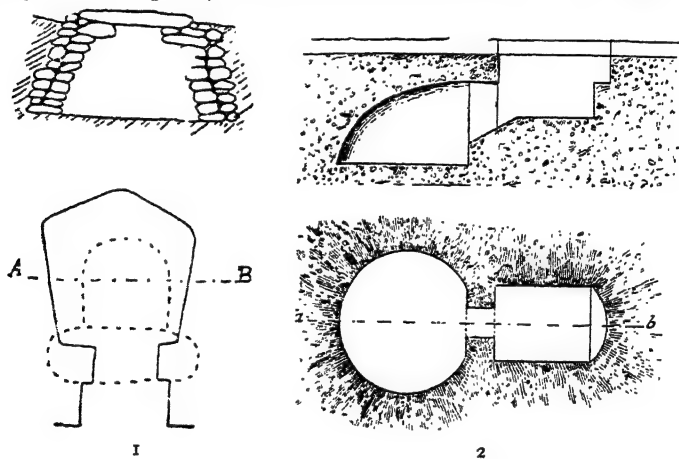


FIG. 25. Tombs on Syros and Eubœa.

the tomb was a pit-cave, excavated in the ground and containing only a single corpse (Fig. 25). The pottery from the northern isles includes dark-faced fabrics often decorated with running spirals and excised triangles (Fig. 24). Technically it corresponds to the Early Helladic I of the Mainland though Cycladic imports at Eutresis³ prove that on the islands this fabric remained current in Middle Helladic times. Favourite forms are the so-called frying pans and globular or cylindrical pyxides with lids. In some graves on Syros pottery of this class is associated with marble idols like Fig. 23, 2, which are common to both groups of islands.⁴ Other graves on Syros and Naxos⁵ contain sauce-boats, jugs with cut-away necks and

¹ *Eφ. Αρχ.*, 1899; cf. p. 48, above.

² Papavasileiou, *Περὶ τῶν ἐν Εὐβοίᾳ ἀρχαίων ταφῶν*, Athens, 1910.

³ Goldman, *Eutresis*, 182.

⁴ Åberg, *Chron.*, IV, 102, nos. 13, 15; in both graves the "frying-pans" were decorated with concentric circles so that those with running spirals may be earlier.

⁵ Åberg, *Chron.*, IV, 86; *Congrès Int. Arch. Athens*, 1905, 221.

other vessels decorated in lustrous glaze paint in the style of Early Helladic III (p. 67). Finally Anatolian forms are common in the northern isles, and one tomb group on Eubœa contained exclusively Troadic vases (like Fig. 19, 3-4) and daggers (like Fig. 20, 2).

The fish emblem carried by (Northern) Cycladic boats had been the standard of a predynastic parish in the Delta that did not survive into historic times in Egypt.¹ So Fish-folk from

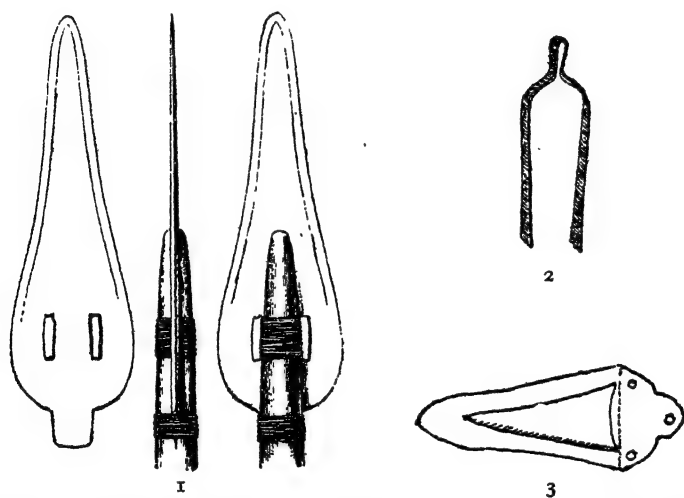


FIG. 26. Slotted spear-head (showing method of mounting), halberd and tweezers. Amorgos ($\frac{1}{2}$).

the Nile may have fled to the Cyclades when Menes conquered the Delta. Other Cycladic traits—the tweezers (Fig. 26, 2), the popularity of stone amulets and particularly the type represented in Fig. 27, 4; the use of palettes (though the Cycladic specimens are generally more trough-like than the Egyptian and Minoan ²) and the preference for stone vases may also be Nilotic traits.

Metal work, pottery and dress, on the contrary, are rather Asiatic than African. Broad flat celts were used as axe-heads. Shaft-hole axes are represented only by an axe-hammer and

¹ Evans, *P. of M.*, II, 26.

² These palettes, perforated at the four corners, resemble, but only superficially, the wrist-guards of the Beaker complex; cf. *BSA.*, III, 67.

an axe-adze from a hoard on Cythnos.¹ Daggers with a stout midrib and rivets, sometimes of silver as in Crete, are common chiefly on Amorgos. Spear-heads were slotted for mounting as shown in Fig. 26; the type with hooked-tang, shown in Fig. 23, 1, has already been connected with Asiatic models on p. 44.

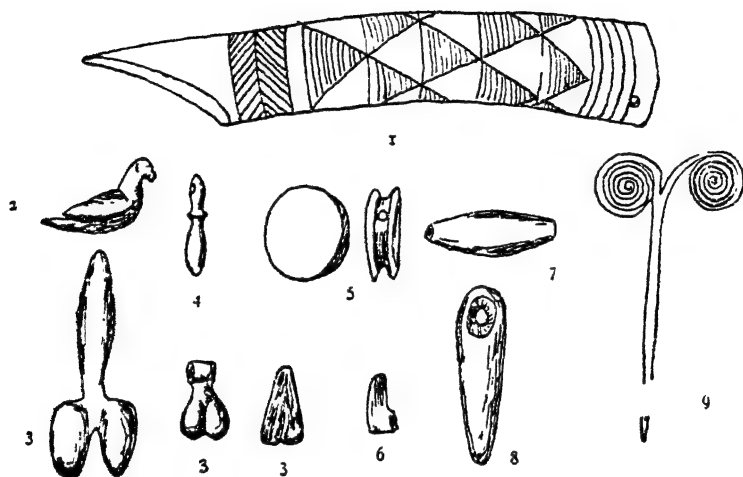


FIG. 27. Early Cycladic ornaments: 2-8 Paros; 1, 9, Syros (§).

At least in the northern islands clothing had to be fastened with pins, as in Anatolia, and the types with double-spiral and bird heads have already been encountered in that area. Rings, bracelets, and diadems of copper or silver were also worn as in Asia. The silver diadems resemble gold ornaments from an E.M.II tomb at Mochlos in Crete and from the Royal Tombs of Ur.² Some of the beads and amulets may be Asiatic, notably the dove-pendants that are found even in the early tombs of the Pelos class.³ The so-called phallic (or winged) beads (Fig. 27, 3) might be compared with the fly-amulets of Egypt and Mesopotamia,⁴ but probably derive from a form fashioned

¹ B.M., *Bronze*, fig. 174.

² Evans, *P. of M.*, I, 97; Woolley, *Ur Excavations: The Royal Tombs*, pl. 139.

³ Åberg, *Chron.*, IV, 62-3.

⁴ Cf. Childe, *NLMAE.*, fig. 36 (Gerzean).

of deers' teeth by the mesolithic Natufians of Palestine.¹ A speciality of the northern isles was the decorated bone tube designed to contain pigments (Fig. 27, 1). But similar tubes have been found in Troy IV and Va, and at Byblos in Syria² as well as on Levkas in Western Greece.

The self-coloured sepulchral pottery belongs in a general way to the same Anatolian tradition as the early Cretan, and some vase forms such as the pyxides are in the same vague way Anatolian. Even the curious frying-pan form so common in the northern graves recurs, in copper, in a "royal tomb" at Alaca Höyük in Central Anatolia.³ (The excised decoration and the form of the handles show that these odd utensils are copied from wooden originals.) On the other hand, the running spiral design on North Cycladic pottery is in a general way a Danubian motive.

As already indicated Cycladic culture declined when Minoan palaces indicate a Cretan grip on maritime trade and the warlike Minyans occupied the Helladic cities. On most islands only a few graves are dated by long rapiers or imported Minyan vases to middle and Late Cycladic times. The "halberd" of Fig. 26, 3, comes apparently from such a tomb.⁴ But her resources in obsidian secured to Melos a share in Minoan commerce, and Thera⁵ too benefited from her neighbours' wealth until a volcanic convulsion overwhelmed her inhabitants. Phylakopi II was a fenced city with regular streets. Imported M.M.I-II polychrome pottery and Minyan vases from Greece found together on the earliest house floors show how close was the island's connection both with Crete and with the mainland. Conversely the matt painted Middle Cycladic I pottery of Melos is significantly like the Early Bronze Age or Cappadocian ware of Alişar, in Central Anatolia, as if the island had also connections with the East. At a later stage in Phylakopi II a large building equipped with pillar-rooms like a Cretan palace and decorated with a frescoe of flying fishes in M.M.III technique might be the residence of a Minoan governor or consul. The potters' craft was industrialized, but

¹ Garrod, *Stone Age of Mt. Carmel*, I, pl. XV, 2. *

² Åberg, *Chron.*, IV, 13, 87; *AJA.*, XXXVIII (1934), 229, 231.

³ Hâmit Zübeyr Kosay, *Ausgrabungen von Alaca Höyük* (Ankara, 1944), pl. LXXXIII, 60.

⁴ *MSAN.*, 1896, 30.

⁵ On Thera see Åberg, *Chron.*, IV, 127-37.

the wheel-made vases were decorated with lovely naturalistic patterns in matt paint imitating the Minoan style of M.M.III-L.M.I (Fig. 28, 3). But though ceramic technique

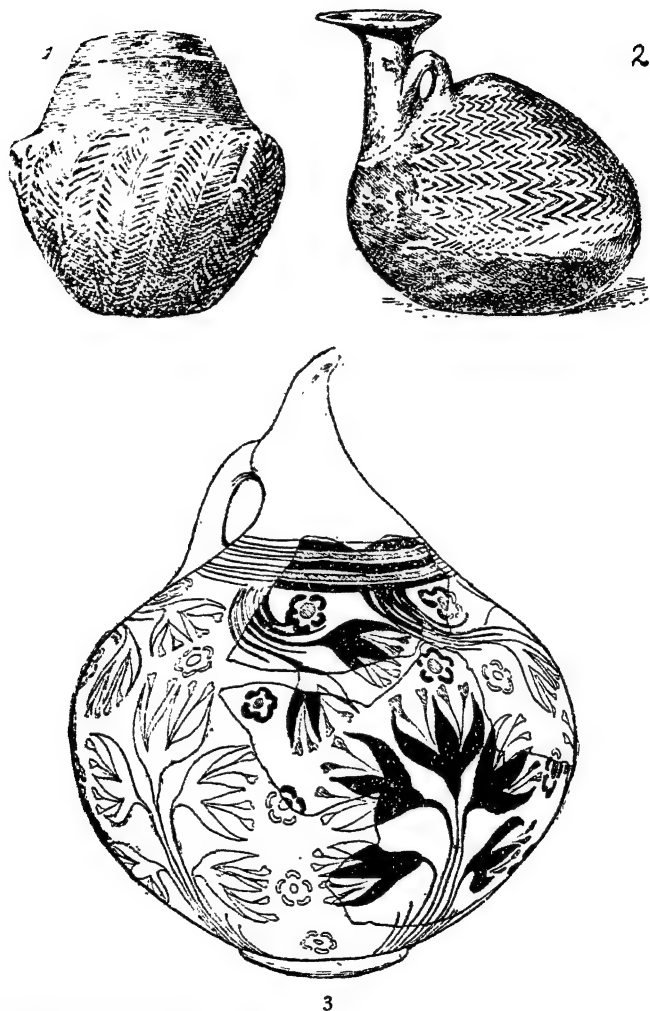


FIG. 28. Cycladic pottery : 1, Pelos ; 2, Phylakopi I ; 3, Phylakopi II. (L.C.)

and style changed there is no break in the tradition ; matt paint had replaced the glaze medium at the beginning of Phylakopi II or even earlier though the patterns at first were

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geometric as in Early Cycladic. In Late Mycenæan-L.M.III times the fortifications of Phylakopi were strengthened; the walls were now 20 ft. thick, and near the gate a staircase led up to a tower or rampart-walk. Most of the other islands have yielded traces of occupation at this time, but their culture now was just a variant of the Mycenæan "koine" described on p. 78.

CHAPTER V

FROM VILLAGE TO CITY IN GREECE

'NEOLITHIC A'

THE Greek peninsula has so far yielded no remains of palæolithic food-gatherers. When the archæological record begins it was already occupied by "neolithic" peasants who must have been immigrants already possessed of a rich equipment, constituting the Sesklo culture.¹ Particularly in the wide valleys of Thessaly and Central Greece they found an environment which they could exploit from small self-sufficing hamlets, continuously occupied. They lived in modest round or rectangular huts of wattle and daub or of stone or perhaps mud-brick on stone foundations. A model from Sesklo shows a house with gabled roof. The repeated reconstruction of such dwellings has converted the settlements into little tells (tomba or magoula). Such mounds are very numerous but generally small: 100 by 75 m. is an average area for a Thessalian tell, but at Hagia Marina in Phocis the mound covered 300 by 200 m. From the stratigraphy of these tells two phases, A and B, of neolithic culture followed by a "Bronze Age" civilization can be deduced.

Now tell formation implies a rural economy advanced enough to maintain the fertility of the fields, if not orchard husbandry that ties the farmer to his fruit trees. In phase A the villagers lived by cultivating cereals, probably also vegetables and fruit-trees² and breeding cattle, sheep or goats, and pigs. For preparing foods stone pestles and mortars were employed as well as saddle-querns. The carpenter used adzes of two types—the bevelled celt (D) and a sort of shoe-last celt (B), quite like the Danubian form (Fig. 29). Both may be made either from pebbles or from sawn blocks. A textile industry is attested by whorls, generally flat, and spools.

¹ Mylonas, *Ἡ νεολιθικὴ Ἐποχὴ ἐν Ἑλλάδι*, Athens, 1928, gives a good general survey of the Stone Age. Cf. Weinberg, *AJA.*, LI (1947), 167-185.

² Barley is attested for period A at Tsani, wheat, barley, figs, pears, and peas for period B at Sesklo and Dimini, *vulgate* wheat from Rakhmani IV (D).

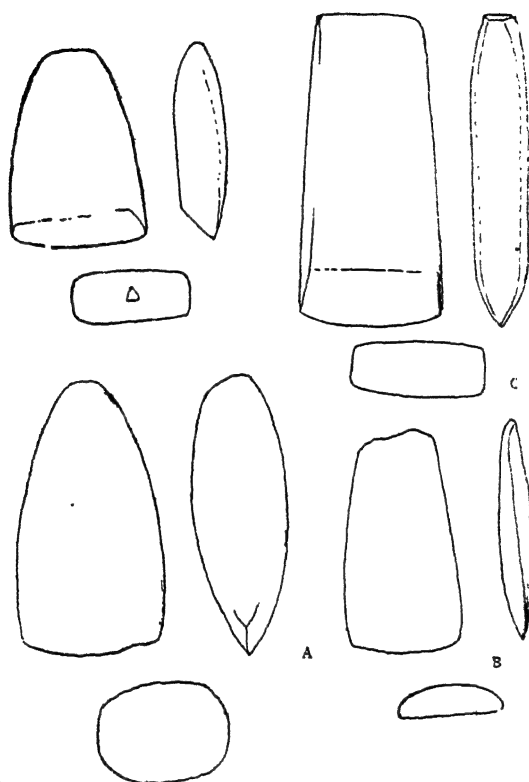


FIG. 29. Thessalian stone axes and adzes. After Tsountas ($\frac{1}{4}$).

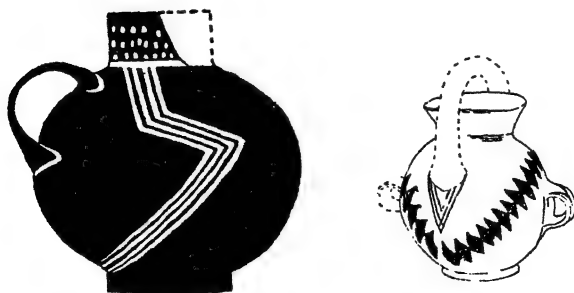


FIG. 30. Pottery of Sesklo style, white on red and red on white. After Wace and Thompson ($\frac{1}{4}$).

Unspecialized potters built up by hand delicate vessels, imitating baskets or perhaps even metal vessels¹ in an extremely fine burnished ware, generally red, in the Peloponnese sometimes black or mottled.² The pots might be decorated with simple rectilinear patterns formed by wedge-shaped or round punctuations or by lines in white paint. In Northern Greece the vase surface was more often covered with a white slip on which designs were painted in red; in Central Greece and the Peloponnese the white slip is often omitted. The patterns, often very elaborate, are clearly derived from basketry originals, but each hamlet developed its own distinctive style of painting. A few stone vases were found at Sesklo, and a bone spatula like Fig. 45.

Though self-sufficing communities, the neolithic hamlets were not mutually isolated; they exchanged pots³ and doubtless other commodities. War is not attested; the only definite weapons found were sling-stones, probably used by hunters. Peaceful commerce outside the province is disclosed by the general use of obsidian. At Tsani a stone button seal bearing a cruciform design was found, and clay models of seals are reported from Sesklo, Hagia Marina and from Nemea in the Peloponnese. The type is certainly Asiatic. Such seals generally occur in a "chalcolithic" milieu, and copper may well have been known to the "neolithic" Greeks. Some of their pots seem to imitate the shape and even the rivets of metal vases, and at Hagia Marina Soteriadhes⁴ claims to have found riveted copper daggers on virgin soil in a Sesklo settlement. Still, no sustained effort was made to secure regular supplies of metal.

Surplus energies were devoted rather to domestic fertility cults. For these figurines were modelled in clay, depicting, often with considerable verisimilitude, a female personage, standing or seated, or, in one example from Chaeroneia, nursing an infant (the "kourotrophos") (Fig. 31). Model thrones or altars (Fig. 32) were also manufactured. Cremation burials

¹ Forsdyke, British Museum, *Catalogue of Greek and Etruscan Vases*, I, pp. XVI and 23.

² The surface colour is determined by the firing, an oxidizing atmosphere yielding red, a reducing black. See Blegen, *Prosymna*, 368-9; *Hesperia*, VI, 491-6.

³ Wace and Thompson, p. 241.

⁴ Mylonas, *op. cit.*, fig. 64.

in pits are reported from a cave near Argive Heraeum.¹ As ornaments and charms the peasants wore bracelets of stone or

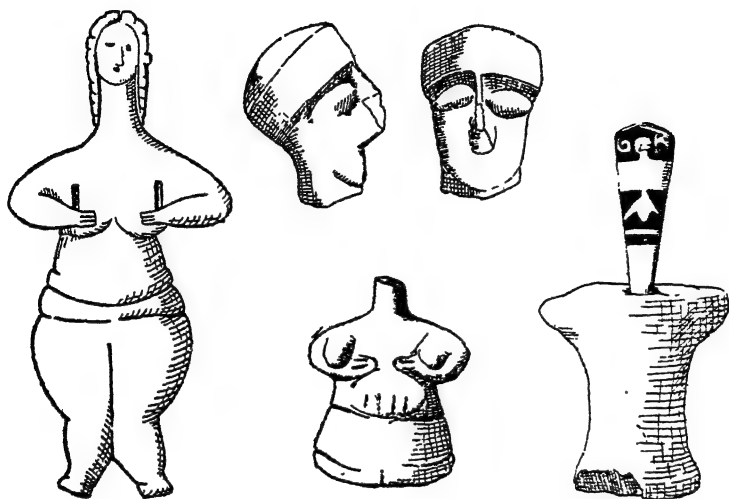


FIG. 31. Neolithic figures, Thessaly. After Wace and Thompson. (1, $\frac{1}{2}$; 3-4, $\frac{1}{4}$; 2, $\frac{1}{2}$.)

Spondylus shells (as on the Danube), and stone nose-plugs as in the al'Ubaid culture of Sumer.

The basketry pottery, the figurines, the use of brick and of slings instead of bows and above all the stamp seals suggest

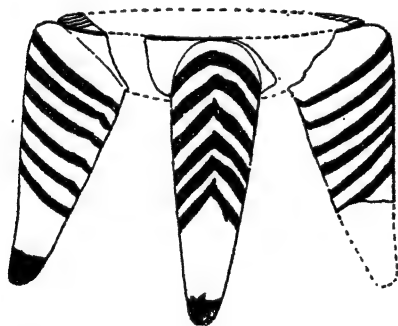


FIG. 32. Miniature altar or throne. After Wace and Thompson ($\frac{1}{4}$).

an Asiatic origin for the neolithic Greeks, but in North Syria rather than Anatolia. Technically the chalcolithic pottery of

¹ Blegen, *Prosymna*, 24-7.

Cyprus¹ is very like the red-on-white ware described above and may constitute a link with the Tel Halaf complex farther east. At the same time connections with the cultures of the Lower and Middle Danube valley are already discernible; significant common elements are shoe-last adzes, triangular altars, shell bracelets and a coarse rusticated ware from Thessaly and Levkas.²

The Sesklo culture just described is found all over Thessaly and Central Greece and extends north into the Haliakmon valley, westwards to Levkas, and south into the Peloponnese. And phase A endured for a long time: at Tsangli five out of ten metres of settlement debris are attributed to it, and four out of eight occupational levels at Zerelia. But eventually the continuity of tradition was interrupted. Changes in ceramic technique, in art, in architecture, and even in economy not only define a new period, but also may betoken infiltrations of new peoples. But since the break is nowhere complete, it may be assumed that the old population absorbed, or was subjugated by, the new settlers. The latter's cultural affinities seem to lie in the Balkans, but the manifestations of their advent differ in different regions.

' NEOLITHIC B '

At Dimini near the Gulf of Volo a completely new settlement was founded in phase B. In contrast to the earlier open hamlets it was defended by a complex of stone walls (Fig. 33). Sesklo was probably fortified at the same time. In both citadels houses of the megaron type with porch and central hearth were erected. At Dimini and Sesklo the bevelled adze (D) went out of use, and axes (Fig. 29, C) were employed for the first time. These were hafted at Dimini with the aid of perforated antler sleeves. Copper and gold were now imported; they are represented respectively by two flat celts and a ring-pendant (Fig. 34, 2), all from Dimini. In East Thessaly the vases were now decorated with spirals, normally combined with the older basketry patterns; the designs may be incised or painted in white or warm black on a buff, red, or brown ground,

¹ *Report*, Dept. of Antiquities, Cyprus, 1936 (Nicosia, 1938), 28; Schaeffer, *Missions en Chypre*, 110. The chalcolithic and proto-chalcolithic of Mersin in Cilicia provide even better analogies, *LAAN.*, XXV, 86; XXVI, 158, 55-63.

² *AM.*, LVII (1932), 104.

and may then be outlined with a second colour—black or white; the high pedestalled bowl or fruit-stand appears for the first time. Fortifications, megaron-houses, antler mounts, gold, spiral motives, polychromy, pedestalled bowls are all combined as traits of the Ariusd culture in Transylvania. Twenty years ago it looked as if Dimini had been founded by invaders from the Alt valley who imposed their culture also

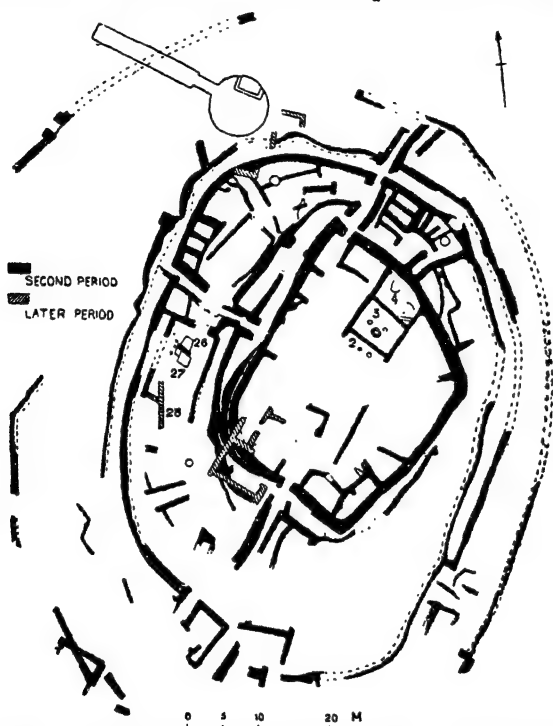


FIG. 33. Plan of fortified village of Dimini. After Tsountas.

on the inhabitants of Sesklo, Rakhmani, and other East Thessalian villages. But now polychrome Dimini ware has turned up in the Peloponnese at Gonia near Corinth and at the Argive Heraeum, though at the latter site spirals are missing. Sites really intermediate between Ariusd and Dimini have not been disclosed by explorations in the intervening region. A bodily transfer of any North Balkan culture to Greece accordingly seems improbable to-day.¹ Perhaps the

¹ Wace in *ESA.*, IX, 123.

admitted similarities between Dimini and Danubian sites should be explained as parallel modifications of a cultural continuum extending right across the Balkans. For instance while spiral motives might be regarded as Danubian elements in Greece, the technique of vase-painting, even beyond the Balkans, must be considered a south-eastern trait (see pp. 91 f. below).

In Western Thessaly and Central Greece the break is less abrupt. But everywhere the bevelled adze went out of fashion to make way for blunt-butted or flat axes (types A and C). And Danubian influence has been seen ¹ in the appearance of black or grey (carboniferous) wares which may be decorated by stroke burnishing, flutings or corrugations, incisions, beading, and thin white paint, bear spiral patterns and form pedestalled bowls. Admittedly all these peculiarities, save white painting, occur also north of the Balkans in the Middle Danube basin

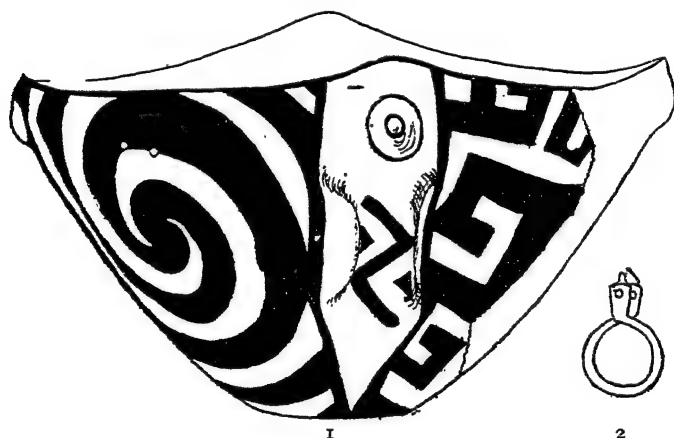


FIG. 34. Dimini bowl ($\frac{1}{4}$) and gold ring-pendant ($\frac{2}{3}$). After Tsountas.

and reflect a cultural continuity now extending from the Peloponnese to Hungary. But Crete and the Levant might provide as likely sources for black burnished wares, pedestalled bowls and blunt-butted axes as the Danube basin (p. 18); even stroke burnishing adorns pottery from Asia Minor, Syria, and E.M. Crete.² And in any case local styles of painted ware, decorated with exclusively rectilinear designs, though no

¹ Frankfort, *Studies*, II, 40-5.

² *BSA.*, XXXVII, 31-5.

longer in red-on-white, carry on the ceramic traditions of period A into period B. And in Bœotia and the Peloponnese the black surface of carbonaceous ware was sometime simulated by a coat of lustrous (glaze) paint applied to the old red wares; this has been termed "neolithic Urfirnis"¹ and should be no older than E.M.I. to which period stroke-burnished ware likewise points.

THE EARLY HELLADIC BRONZE AGE

The influx of new settlers in period B had not involved an immediate transformation of the economic structure of Hellas. Despite the copper axes from Dimini, phase B can be termed neolithic as legitimately as phase A. A civilization of Bronze Age character appears in the tells of Central Greece only in a subsequent stratigraphical phase. To this the name "Early Helladic" (E.H.) has been given and it can be subdivided into three phases, E.H.I, E.H.II, and E.H.III, like the Early Minoan period.

The "neolithic" population, swollen by the immigrants received in phase B, might have sought an outlet for the surplus in trade and industry. In many cases the Early Helladic townships have been built upon the sites of neolithic villages; sometimes specifically neolithic elements, such as Dimini ware, are found on the oldest "Bronze Age" floors. But on the whole it looks as if the new economy was introduced by fresh invaders, coming ultimately from Anatolia. Several Early Helladic towns are new foundations on sites chosen with a view to trade rather than agriculture. Architectural tricks, such as herring-bone masonry (Eutresis, H. Kosmas) and pits sunk in the house-floors (bothroi), and ceramic novelties—self-coloured pyxides, jugs with cut-away necks, bowls with tubular and horned lugs growing from the inverted rims and askoi—suggest a transfer of Anatolian culture across the Ægean. But if that means colonization, it was at least a complex process. All innovations do not occur simultaneously. One of the earliest pots from Asine is more like a Copper Age pot from Alişar than any West Anatolian form.² In the Peloponnese and Attica Cycladic features point to the islands as a

¹ *Abh. Bayer. Akad.* (phil.-hist. Kl.), v. (1931), 31; Blegen, *Prosymna*, 371; *Hesperia*, VI (1937), 498.

² Frödin and Persson, *Asine*, 204.

route on which the colonists might have lingered. In Central Greece, on the contrary, Troadic and Macedonian traits are more conspicuous, as if borne by a more landwise migration. In the West while distinctively Macedonian traits occur (e.g. an "anchor ornament" from Levkas), Heurtley¹ gives good grounds for thinking that the bulk of the Bronze Age colonists on Ithaka hailed from Corinthia. And in general there is an evident overlap between Early Helladic and "Neolithic".

In any case the resultant Early Helladic civilization exhibits an explicitly urban character. All settlements indeed still depend on farming, often combined with fishing. Viticulture is now definitely attested by grape-seeds from Hagios Kosmas. But everywhere trade and industry offered outlets for surplus population. Copper, tin, lead, gold, and silver were mined or imported, distributed, and worked. Stone axes are still common, at least on rural sites, but metal must have been freely used for craftsmen's tools. Though few have survived we have an axe-adze and a flame-shaped knife like the Troadic example of Fig. 20, 1, from an E.H.II level at Eutresis. Obsidian was still used for arrow-heads (hollow-based), knives, and sickle-teeth.

The people lived normally in long rectangular or apsidal two-roomed houses (Orchomenos) or in agglomerations of small chambers (Zygouries). The wall foundations were of stone, but the superstructure was often of mud-brick supporting a roof. By E.H.III tiles were employed. The houses were generally closely grouped, and some settlements (e.g. Ægina) were already girt with walls, but their areas are unknown. In the rustic townships of Central Greece such as Orchomenos the houses were oval or apsidal and more scattered. At Tiryns² and Orchomenos monumental circular buildings were erected perhaps for sacred rather than domestic purposes.

The ceramic industry was not industrialized, since Early Helladic vases are all hand-made. The fabrics that appear first (from E.H.I onwards) are dark and self-coloured, burnished and decorated with incised and excised patterns. In a later phase (E.H.II) begins a buff ware which is covered with a dark glaze paint to reproduce the effects of the old burnished fabric. It is generally known as *Urfirnis* and probably denotes Cretan

¹ *BSA*, XXXV, 39.

² The round foundations at Orchomenos are also Early Helladic rather than "neolithic". *Abh. Bayer. Akad.*, VIII, 1934, 8.

influence¹ though red wares had been coated with a rather similar "glaze" in late neolithic times. In E.H.III the glaze paint is used as the medium for producing dark geometric patterns on a light ground—chiefly in the Peloponnese—or as a ground on which similar patterns are drawn in white—in Central Greece. The rectilinear light-on-dark designs recall



FIG. 35. Early Helladic sauce-boat, askos, tankard, and jar. (†)

Cretan E.M.II-III patterns, but are also foreshadowed on the black neolithic B vases of the Mainland. Distinctive Early Helladic II-III shapes are sauce-boats (also manufactured in gold²), hour-glass tankards, askoi and globular water-jars, at first with ring-handles,³ later with flat vertically pierced lugs, on the belly (Fig. 35).

¹ Frödin and Persson, *Asine*, 433.

² *JHS.*, XLIV (1924), 163.

³ This form resembles the Corded Ware amphora, Fig. 83 (cf. Fuchs, *Die griechische Fundgruppen der frühen Bronzezeit*, 1937), but also good Anatolian forms (*Germania*, XXIII, 62).

The importance and wide ramifications of Early Helladic commerce are illustrated not only by the materials used, but by actual foreign manufactures imported or copied locally: leg amulets as in Crete and Egypt (Hagios Kosmas), Cycladic bone tubes (Hagios Kosmas and Levkas), frying pans (Hagios Kosmas, Eutresis, Asine), marble idols and palettes (Hagios Kosmas) and a double-spiral pin like Fig. 27, 9 (Zygouries). From Asia came an arm-cylinder of twisted silver wire (like a gold one from Troy II) found in a grave on Levkas and a two-handled goblet like Fig. 19, 5, copied locally with other Troadic forms at Orchomenos. In the E.H.III level at Asine lumps of clay stamped with E.M.III-M.M.I seal-impressions must have sealed bales of merchandise or jars of oil brought from Crete. And the Early Helladic merchants themselves felt the need of seals; seals, probably imported, have been found at Hagios Kosmas, Asine, and other sites. One from Asine is almost identical with a Sixth Dynasty Egyptian seal. The counter-balancing exports may possibly have included tin from Cirrha.¹

The defensive character of some settlements and the existence of arrow-heads might warn us not to treat all these foreign relations as entirely pacific. Anatolian forms and fabrics at Orchomenos and in E.H.III levels at Eutresis, and on Ægina, Macedonian wishbone handles from Lianokladhi, Orchomenos, anchor ornaments from Orchomenos, Levkas, and Ithaka, sherds of Corded Ware from Hagia Marina and the E.H.III town of Eutresis might be due to an influx of new settlers from the Troad, Macedonia, and farther north.

The marble figurines of Cycladic type may denote a cult of a mother goddess. Clay horns of consecration from Asine point to rites like the Minoan and Anatolian. But the principal superstitious impulse to accumulation of wealth was supplied by the desire for a good burial. In the Peloponnese and Attica the dead were buried in family vaults outside the settlements. At Zygouries the tombs were pit-caves or shafts cut in the rock, one of which contained fourteen skeletons. At Hagios Kosmas in Attica the earlier ossuaries were cists with a false door facing the township. The cists were later replaced by built ossuaries like Fig. 25, 1, but still used as collective tombs; in each case

¹ Between Delphi and Crisa on the Gulf of Corinth, O. Davies discovered open workings from which all the ore had been removed but in one a sherd that might perhaps be E.H., some slag quite devoid of tin, but a crucible to which adhered a little stannic oxide. *JHS.*, XLIX (1929), 93-4.

the bodies, in the contracted attitude, had been introduced through the roof. In Levkas the bodies were buried, contracted or sometimes allegedly burned, in jars or cists. But these individual graves have generally been grouped in or under circular stone foundations, 5 to 9 m. in diameter, which sound like denuded cairns (as does a collective grave at Malthi) and contained in addition burnt layers termed "pyres" by Dörpfeld. Such cist and jar burials accord with Anatolian practice, but their assembly within a circle brings them into line with the family tombs of Attica and Corinthia. Now collective burial had been practised in Crete and the Levant, but was not in vogue in Anatolia. It cannot then have been introduced by immigrants from that quarter though it might have been developed out of local neolithic cave burials (p. 61). Out of six skulls from Hagios Kosmas three were long- and two round-headed.¹

In the stratigraphical record the Early Helladic culture is succeeded by another, the appearance of which is taken to mark the beginning of a new period, termed Middle Helladic. The latter in turn passes over into the Mycenæan period, also termed Late Helladic to complete the analogy with the Minoan system. In a total deposit of 6.5 m. at Eutresis, 4 m. are accounted for by E.H. ruins, and 2 m. out of 4.5 at Korakou are likewise Early Helladic. Now Cretan connections make possible absolute datings for the Helladic periods. Pottery typical of developed Middle Helladic was found with M.M.Ib imports at Phylakopi on Melos, and M.M.II imports occur in the M.H. settlement on Ægina. Seals and sealings of E.M.III type occur in the E.H.III level at Asine, where an Egyptian Sixth Dynasty seal² was also found. Hence the end of the Early Helladic period can hardly be later than 1800 B.C., and E.H.III might go back at least to 2200 B.C. Hence at least for the Peloponnese and Attica 2750 B.C. might not be an extravagant estimate for the beginning of the "Bronze Age"—E.H.I. But in peripheral regions Early Helladic culture, as defined by its pottery, seems to have lasted longer than at central points. On Levkas a rapier, 45 cm. long, from the pyre in E.H. cairn R7, and a gold mounting from R17 approximate to Shaft

¹ Coon, *Races*, 144.

² Frödin and Persson, *Asine*, 234; cf. Reisner, *Naga ed. Dér*, III (1932), 118.

Grave types, current at Mycenæ about 1600 B.C. If E.H. persisted so long, its beginnings in provincial regions may be equally belated. So the appearance of E.H. sherds above the neolithic levels in Thessalian mounds affords no accurate *terminus ante quem* for the local "Stone Age" periods A and B. In fact an askos of E.H. form was found with Dimini ware¹ while other "neolithic" wares would be Early Minoan in Crete (p. 65). So Neolithic A need only just go back into the fourth millennium, B.C.

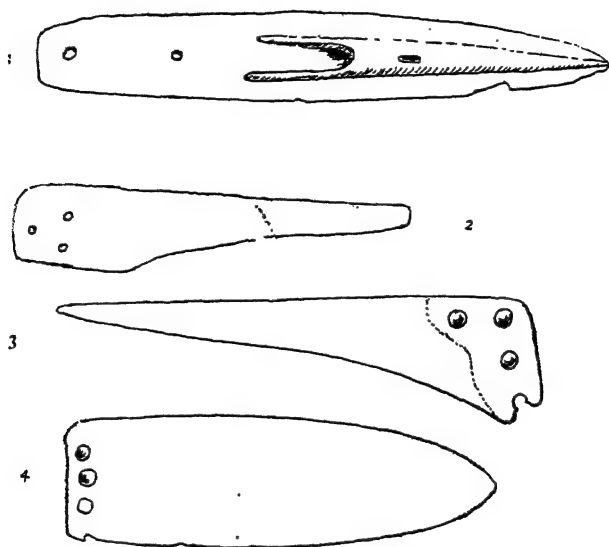


FIG. 36. Spear-head, knives, and daggers from M.H. graves in Thessaly. After Tsountas ($\frac{1}{2}$).

MIDDLE HELLADIC

The Middle Helladic period is ushered in by the violent destruction of Orchomenos and other sites. Many were reoccupied. But abrupt changes in architecture, pottery, burial rites, and general economy, indicate the dominance of new and warlike settlers. The latter can be most easily recognized by their pottery—the reduced grey ware described on p. 46 and unhappily termed Minyan by archæologists—and by the practice of burying the dead contracted in small cists or in jars among the houses. The martial character of the invaders

¹ *AM.*, LVII (1932), 115; cf., *BSA.*, XLIV (1949), 258-306.

is disclosed by the deposition in the graves of metal weapons (Fig. 36)—knives, ogival daggers, and spear-heads with a socket, cast like a shoe on one face of the blade (Sesklo, Levkas, Mycenæ). Hollow-based obsidian arrow-heads were still used, but now the archer used also grooved stone arrow-straighteners like Fig. 109 (Asine, Levkas, Mycenæ). Perforated stone battle-axes appear for the first time at Eutresis and Asine and antler axes and sleeves at Asine. On the other hand such craft



FIG. 37. Minyan pottery from Thessaly ($\frac{1}{2}$), and imitations from Thermon, Ætolia ($\frac{1}{18}$).

tools as saws and gouges are first found in a Middle Helladic grave (on Levkas).

The Minyan invaders did not exterminate the older inhabitants or destroy their economy, but added to the population and accelerated the accumulation of wealth. Malthi now attained its maximum population; the walls comprised, within an area of $3\frac{2}{3}$ acres, 305 rooms, while the citadel was supplied with spring water by an aqueduct. The houses are more often agglomerations of rooms than long rectangular halls.¹ Tin-bronze was now worked by the smiths, and stone

¹ *AJA.*, XLVIII (1944), 348.

moulds for casting spear-heads like Fig. 36, 1, and Minoan double-axes were found even at Dimini in Thessaly.

The potters' craft was soon industrialized. The grey-ware vases were fired in a closed kiln and either formed in a mould or thrown on the wheel. A family of Minoan potters settled on Ægina bringing with them their clay wheel as used in Crete.¹ Perhaps such immigrant craftsmen were responsible for introducing the wheel from Crete everywhere, but there is

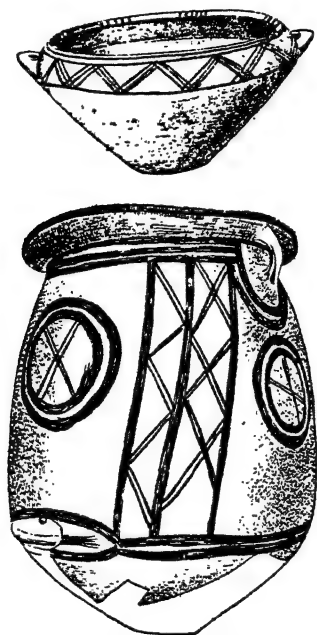


FIG. 38. Matt-painted ware from Ægina. ($\frac{1}{10}$.)

nothing Minoan about their products. The favourite "Minyan" forms are ring-stemmed goblets, high-handled cups (Fig. 37), craters and amphoræ. Both in hue and form such Minyan vases imitate silver models. But they had to compete with hand-made vessels of the same shape in polished brown or black and glazed red wares. And rather later jars, bowls, and other shapes were made by hand in buff or greenish ware decorated with geometric patterns in matt paint (Fig. 38).

¹ *Jahrbuch des d. archäolog. Instituts* LII, *Arch. Anzeiger*, 1937, 20-5.

In form and decoration these agree precisely with contemporary Middle Cycladic vessels from Melos and show the same Central Anatolian affinities (p. 55). A beaked jug assigned to M.H.III from Asine seems in fact to be an imported "Early Hittite" product.¹

Trade with Crete was at first interrupted, though obsidian was continuously imported from Melos. But during M.M.II Minoan polychrome pottery was being imported into Ægina and imitated at Eutresis.

Middle Helladic culture typified by Minyan ware and cist graves is found all over Greece as far as the Ionian Islands, Levkas, Thessaly, and even Chalcidice. In 1914 Forsdyke² suggested a Troadic origin for the intrusive elements. Now some new metal types—lock-rings with flattened ends and long narrow chisels—, like the burial rites, are Anatolian. And Minyan ware is common at Troy. But its first appearance there in Vc can hardly be earlier than in Greece. Burials within the settlement are distinctive of Central Anatolia and Iran in contrast to Western Anatolia. And grey wares technically allied to Minyan are certainly characteristic of Northern Iran³ so that perhaps we should look farther east than Troy. On the other hand, Persson⁴ insists on the "Northern" character of the battle-axes and other new weapons. The Middle Helladic culture would have been established by the intrusion of their wielders from beyond the Balkans. The Anatolian elements—jar-burial, matt-painted ware—would be later additions. But of course battle-axes had long been common in Anatolia as well as north of the Balkans (pp. 37, 44). Many authorities think that the "Minyans" were the first Indo-Europeans to reach Greece. On Persson's view parallel streams of them from the Balkans would have brought Minyan ware, horses, and Ionic Greek to the Troad and the Peloponnese (cf. p. 46). The available skulls belong to a very mixed population, predominantly dolichocephalic with some northern affinities.⁵

¹ Frödin and Persson, *Asine* 286; cf. van der Osten, *The Alishar Hüyük*, 1928-9 (O.I.C. Publ. XIX), pl. IV, p. 1671.

² *JHS.*, XXXIV, 126 ff.

³ Cf., e.g. Schmidt, *Excavations at Tepe Hissar, Damghan*, and Arne in *Acta Arch.*, VI, 1935, 18 ff.

⁴ Frödin and Persson, *Asine*, 433.

⁵ Coon, *Races*, 144.

MYCENÆAN PERIOD

Ultimately the martial character of Middle Helladic culture led to a concentration of wealth in Mainland Greece, the complete urbanization of its economy and the adoption on the peninsula of the technical equipment created in Crete. This transfer was made possible by the rise of warrior princes in the townships who concentrated surplus wealth and expended some of their accumulation on the support of Minoan artificers and the stimulation of trade. The urban revolution was first consummated at Mycenæ, a citadel that commands a main artery of communications between the south-east and the north-west.

The old settlement, founded in Early Helladic times, became the capital of a potent dynasty. The kings and their families were buried with regal wealth in the six Shaft Graves on the citadel. Each deep shaft, save No. II, contained several bodies buried extended and originally encased in wooden coffins. Stelæ, carved in low relief with spiral patterns and battle scenes that attest for the first time in Greece the use of war chariots drawn by horses, must once have marked the graves. Imported Minoan pottery shows that the earliest graves at least goes back to M.M.III, the latest hardly outlasts L.M.I (L.H.I). The Shaft Grave epoch falls within the sixteenth century.

The equipment purchased by the dynasts' concentrated wealth is thoroughly Minoan. Their palace was equipped with a light-well, like those of Knossos, and decorated with frescoes in Minoan technique. Most weapons and ornaments are evidently products of Minoan craftsmen. On figured documents men wear the Minoan drawers and women the flounced skirt of the island. Minoan signets and probably the Minoan script were adopted for official business. The cult of the Mother Goddess, associated, as in Crete, with the symbols of the dove, the double-axe, the sacred pillar and horns of consecration, was practised with Minoan rites at Mycenæ, and draughts were played as in Crete. No one denies that craftsmen trained in Cretan schools produced the objects in question though many must have been executed at Mycenæ itself to the order of the local king.

On the other hand, the martial character of Early

Mycenæan civilization, as revealed in the fortification of the city, the abundance of weapons and the popularity of battle scenes in art, seem quite foreign to the Minoan spirit. The kings of Mycenæ wore beards; the Minoans generally shaved their faces. The Shaft Graves form part of a Helladic cemetery, and grave No. II is really just a "Minyan" cist. In the tombs Helladic Minyan and matt-painted vases are juxtaposed to Cretan imports. An arrow-straightener (grave VI), and a Mainland spearhead like Fig. 36, 1 (grave IV) occur side by side with Minoan socketed spearheads and the rapiers of Fig. 14, 1-2. A round-heeled dagger and a halberd from grave VI, and perhaps also helmets plated with boars' tusks, though locally made, are proper to West and Central European armament, not to the Ægean, and amber beads from grave IV are unambiguously imports from the North. Other ornaments may be Anatolian; gold tubes terminating at each end in double spirals recur in the treasures of Troy II, in a royal tomb at Alaca Hüyük, at Brak¹ between 2300 and 2100 B.C. and in a fourteenth century grave at Mari² in North Syria.

Were then the dynasts who concentrated power and wealth at Mycenæ Minoan princes carving out for themselves a kingdom on the Mainland? Or were they rather Helladic chiefs who by trade or by raids had secured Minoan commodities and enticed or compelled Cretan artisans, clerks, and priests to settle at their court? The first view is supported by the supreme authority of Evans and accepted by Pendlebury. The alternative is endorsed by Blegen, Karo, Persson, Wace, and most other authorities.³ The indisputable facts are the transfer to the Peloponnese of Minoan artisans and technical equipment and the adjustment of the Helladic economy to allow them to function.

Between 1500 and 1400 B.C. the same process of acculturation was accomplished at other sites which had remained rural townships during the Early Mycenæan Shaft Grave epoch. Here again the change coincided with the rise in the townships of chieftains, concentrating the local wealth for expenditure on the products of secondary industry and

¹ *Iraq*, IX (1947), 171.

² *Syria*, XVIII, 1937, 83.

³ See Nilsson, *Homer and Mycenæ* (London, 1933), 71-82, for a good summary, but cf. Pendlebury, *Crete*, 225-230.

trade. These celebrated their elevation by erecting stately beehive tombs or tholoi. Such tombs are significantly located near the heads of southward facing gulfs and along natural trade routes by sea or land. On the east coast these Middle Mycenæan tholoi extend as far north as the Gulf of Volo, on the west to Kakovatos in Elis. A wealth of amber beads from the last-named tombs may explain the westward extension of Mycenæan culture and shows that amber now reached Greece along the well-documented route across Central Europe to the Adriatic; for the beads and spacers are of the same forms as were current from Denmark to Bohemia.

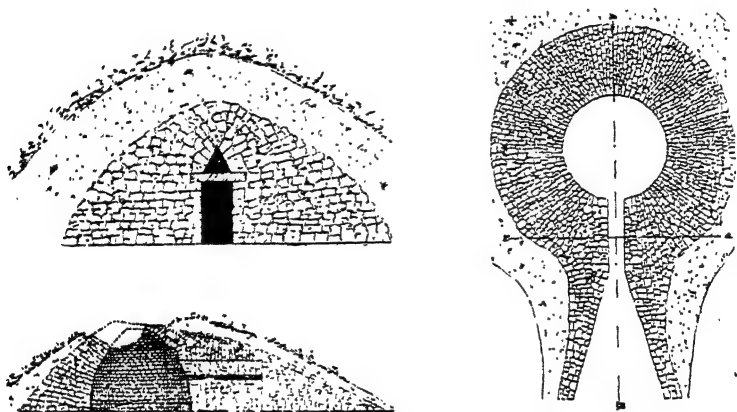


FIG. 39. Mycenæan tholos tomb on Eubœa. After Papavasileiou.

The bulk of the grave goods from such tholoi are, however, either of Minoan origin (such as the Vapheio cups and some vases painted in the L.M.Ib style) or locally produced by craftsmen trained in the Minoan school. So too the palaces now erected at Tiryns and Thebes (neither a megaron) are decorated with frescoes in the Minoan technique. And many jars notably at Thebes bear inscriptions in the Minoan signary.

Still, however much of their equipment may have been Cretan, the Middle Mycenæan cities have an explicitly Mainland character just as much as Mycenæ itself. The tholos tomb may be a Minoan device, but in Crete only one M.M. tholos, discovered in 1939, can be cited as a link between the E.M. ossuaries and the Mainland vaults. Their corbelled chambers, the finest built in ashlar masonry, were entered by a long passage or dromos. Some were erected in an excavation in

a natural hillside but many stood on level ground or (as in Ireland) on a hill-top and were covered by an artificial mound or cairn¹ (Fig. 39). The similarity to tholos tombs in Western Europe is too close to be accidental and is enhanced in the case of the "Treasury of Atreus" at Mycenæ by the addition of a small cell opening out of the beehive chamber.² The majority of the tholoi (Kapokli, Dimini, Menidi, Thorikos, Vapheio, Messenian Pylos, Kakovatos, Chalcis) have yielded pottery of L.M.I-L.M.II style, but others are admittedly Late Mycenæan. Among the nine tholoi at Mycenæ (which had all been plundered in antiquity) Wace claims to trace a development from simpler (Middle Mycenæan) L.H.II types to the superbly carved "Treasury of Atreus" which would be L.H.III. Evans on the contrary believes in a degeneration; he contends that "Atreus" (the carvings on which are paralleled by M.M.III capitals from Knossos) was originally designed to contain the bones of the king eventually deposited in Shaft Grave VI. But a very rich tholos found intact at Dendra near Midea contained no pottery earlier than L.H.III, though the gold and silver vessels seem to be L.M.I. products.³

Throughout the L.H.II phase rural townships subsisted side by side with fenced cities, household crafts competed with specialized industries, and Middle Helladic traditions in potting and cist-burial survived. But by 1400 B.C. the Mainland had thoroughly mastered Minoan techniques and assimilated the Cretan industrial system. Native workers, having been apprenticed to Minoan craftsmen, could turn out *en masse* rather shoddy articles that satisfied the less refined tastes of the Mainlanders and gradually ousted the products of household industry. Thus equipped the Mainland took over from Crete the political and economic hegemony in the Ægean. Knossos was sacked; the Continental megaron replaced the Ægean palaces at Phaestos and Phylakopi. The Mycenæan cities were more numerous and perhaps more populous than the Cretan; the acropolis of Mycenæ alone, not to mention

¹ So Bodia (Messenia), Kakovatos, Heræum, Patras, Vapheio, Menidi, Thorikos, Kapokli; cf. Valmin, in *Corolla archæologica Gustavo Adolpho dedicata*, Lund, 1932, 217 ff.

² Cup marks have been noted on the stones composing some tombs as on many megalithic tombs in North and Western Europe, Palestine, and the Caucasus, *Acta Arch.*, XV (1944), 193.

³ Persson, *The Royal Tombs at Dendra near Midea* (Skrifter, K. Human Vetenskapssamfundet i Lund, 1931).

unwalled suburbs, covered about 11 acres, that of Asine nearly 9, Gla in L. Copais no less than 24 acres. The immense cemeteries of rock-cut chamber-tombs adjacent to each city are even more convincing than the areas. Each tomb, an irregular chamber entered by a narrow passage or *dromos*, was a family vault. Some contain as many as twenty-seven corpses. Though carefully sealed up after each interment, such tombs were in fact reopened periodically and used over several generations; vases of L.H.II, L.H.IIIa and L.H.IIIb styles were found in one and the same tomb at Mycenæ, showing its use for burial for at least two centuries (1450-1250 B.C.). And a family likeness could be detected on the skeletons from the same tomb. This collective burial practice, though deeply rooted in the Ægean and still current in Crete in Middle Minoan times, is in sharp contrast to the "Minyan" usage and looks like a reversion to Early Helladic customs or a general adoption of the Minoan rite.

The populous cities sought an outlet for their goods and overflowing population in trade and colonization. Mycenæan pottery and other products were exported in quantities to Troy, Palestine, Syria, Egypt, and Sicily, rapiers to Bulgaria and perhaps the Caucasus. The Ægean and Ionian islands and even the coastal tracts of Macedonia received contingents of Mycenæan traders, potters, and metal-workers and were incorporated in the Mycenæan economic system. Mycenæan colonies denoted by tholos tombs were planted even on the coasts of Asia Minor and Syria.¹ In the fourteenth and thirteenth centuries a complete cultural uniformity prevailed over the whole Ægean world—a uniformity that embraced the political diversity reflected in the *Iliad*.

The zenith of Late Mycenæan civilization, as fixed by Mycenæan imports in Egypt and Syria and Egyptian imports in Greece, was reached in the fourteenth century. After 1300 B.C. trade with Egypt declined, wealth diminished, art decayed as piracy and militarism took the place of peaceful commerce. At the same time, fibulæ becoming increasingly abundant (like Fig. 118, 2, or with flat leaf-shaped bow) in the tombs especially at Mycenæ,² Thebes,³ and on Kephallenia,⁴

¹ *Syria*, XIV (1933), 100 ff.

² Examples collected by Montelius, *La Grèce préclassique*, Stockholm, 1928.

³ *Αρχ. Δελτ.*, 1917, 151 ff.

⁴ Kavvadais, *Προϊστορική Ἀρχαιολογία*, 367 and 737.

and cut and thrust swords at Mycenæ¹ betoken an assimilation of costume and armament to fashions current in the still barbarous north. They are heralds of the cataclysm that submerged the Mycenæan civilization—the Dorian invasion very plausibly dated by Greek tradition about 1100 B.C.

Excavations at the principal sites referred to in the text without other documentation can be found in the following publications :

NEOLITHIC.

Dimini and Sesklo (Thessaly). Tsountas, *Αι προϊστορικοί ἀκροπόλεις Διμηνίου καὶ Σέσκλου* (Athens, 1908).

Rakhmani, Tsangli, Tsani, Zerelia, Lianokladhi. Wace and Thompson, *Prehistoric Thessaly* (Cambridge, 1912).

Chaeronea. 'Εφ. 'Αρχ. 1908, 63 f.

Hagia Marina. *R.E.G.*, XXV, 276.

Goniá. *Metropolitan Museum Studies* (New York), III, 1, 1930.

Ægina. G. Welter, *Arch. Anz.*, 1937, 19–26 (in *Jahrbuch des deutsch. archäol. Instituts*, LI).

Corinth. *Hesperia*, VI (1937), 490–524.

Argive Heraeum. Blegen, *Prosymna*, Cambridge, 1937.

Asea in Arcadia, Holmberg in *Skrifter Svensk. Inst. i Rom*, XI (1944).

Levkas (Chirosplia), *ZfE.*, XLIV (1912), 845.

Astakos in Akarnania, *BSA.*, XLII (1947), 156–183.

HELLADIC.

Orchomenos. *Abh. Bayer. Akademie, Phil.-hist. Kl.*, XXIV, 2, 1907 (architecture) : N.F., V, 1931 (neolithic) ; VIII, 1934 (Early Helladic).

Eutresis. Goldman, *Excavations at Eutresis in Boeotia*, Cambridge, Mass., 1931.

H. Kosmas, Attica. *AJA.*, XXXVIII (1934), 259 ff.

Korakou. Blegen, *Korakou*, Boston, 1921.

Zygouries. Blegen, *Zygouries*, Cambridge, Mass., 1928.

Asine (Argolid). Frödin and Persson, *Asine*, Stockholm, 1938.

Ægina. Welter, *Aigina*, Berlin, 1938.

Malthi (Messenia). Valmin, *The Swedish Messenia Expedition* (Skrifter K. Human. Vetenskap. i Lund, XXVI), 1938.

Tiryns. Karo, *Führer durch die Ruinen von Tiryns*, Athens, 1934.
Rodenwald, *Tiryns II*, Athens, 1912.

Levkas. Dörpfeld, *Alt-Ithaka*.

Ithaka. *BSA.*, XXXV, 5–40.

Mycenæ. *BSA.*, XXV (1921–3) (city, tholos tombs).

Arch., LXXXII (1932) (chamber tombs and skulls).

Rodenwaldt, *Der Fries des Megarons von Mykenai* (Halle, 1921).

Karo, *Schachtgräber von Mykenai*, München, 1930.

Kakovatos. *AM.*, XXXIV, 1909, 255 ff.

Messenian Pylos, 'Εφ. 'Αρχ., 1914, 99 ff.

Vapheio, Laconia, *ibid.*, 1889, 129 ff.

Thorikos, Attika, *ibid.*, 1895, 221 ff.

Kapokli, near Volo, *ibid.*, 1906, 211 ff.

Chalcis. Papavasileiou, *Περὶ τῶν ἐν Εὐβοίᾳ ἀρχαίων ταφῶν*, Athens, 1910.

¹ Examples collected by Montelius, *La Grèce préclassique*, Stockholm, 1928.

CHAPTER VI

BALKAN CIVILIZATIONS

NEOLITHIC MACEDONIA

THOUGH facing the Ægean, Macedonia was heavily wooded and extremely cold in winter. The forests sheltered herds of red deer, and, judging by an antler from Vardaroftsa,¹ even European elks wandered down the Vardar in the Early Bronze Age. Macedonian culture² developed along Continental European rather than Ægean lines. It lagged behind the Islands and peninsular Greece; urbanization was only effected late in Late Helladic times during the thirteenth century B.C. Yet throughout prehistoric times the settlements were stable, so that their sites are now mounds (toumbas). And the demands of urban populations for metals soon broke down the isolation of the neolithic villages.

The earliest settlement in the region so far recognized is a simple outpost of the Thessalian Sesklo culture, planted at Sérvia on the Haliakmon. This Thessalian village was violently destroyed after a time and another was built on its site, apparently by new settlers. Judging by the pottery these newcomers, mixed doubtless with straggling representatives of the Sesklo culture, spread all over Macedonia both into Chalcidice and up the Vardar; Macedonia as a whole becomes one province—that of the Vardar culture—in a continuum extending across the Balkans into the Middle Danube basin.

The "Late Neolithic" peasants of the Vardar culture lived in permanent villages of wattle and daub or (at Sérvia) mud-brick huts that at Olynthus were warmed by low-domed clay ovens³ as at Thermi. The cultivation of fig-trees in addition to wheat and millet helped to tie them to the soil, but they bred cattle, sheep or goats and pigs, doubtless practising transhumance like the Vlachs to-day.⁴ The extensive seasonal migrations of the flocks would help to explain the wide diffusion

¹ *BSA.*, XXVII, 45; the prehistoric age of the antler is not quite certain.

² For all details of Macedonian culture, see W. A. Heurtley, *Prehistoric Macedonia*, Cambridge, 1939 (cited P.M.).

³ Mylonas, "Excavations at Olynthus," I (*Johns Hopkins U. Studies in Arch.*, 6), 4 ff.

⁴ Wace and Thompson, *Nomads of the Balkans*.

of intimate cultural traits across the Balkans and into Greece. Hunting expeditions would contribute to the same result ; for game was an important item in the food-supply. Slings were used rather than bows. Carpenters used bevelled and shoe-last adzes and unperforated axes, sometimes mounted in perforated antler sleeves.

At Sérvia the red and painted Sesklo wares were replaced by black polished wares, decorated by fluting, stroke burnishing, incision, or white paint with geometric patterns including spirals. This new fabric is identical on the one hand with those of peninsular Greece in neolithic B times, on the other with the Vinča ware north of the Balkans. Coarse vases may be rusticated as in the Danubian Körös group. At other sites and, Heurtley thinks, rather later the potters produced particoloured fabrics, allied to the polished black, but red and brown in patches, or imitated the black polish by brushing the vase-surface with a dark lustrous paint. Both these varieties have already met us in the Peloponnese (pp. 60, 65). Vases were also decorated with painted patterns generally on a red or dark brown ground. The red vases adorned with black spirals from the last two " Late Neolithic " layers at Olynthus in Chalcidice are almost identical with those from Starčevo on the Middle Danube and on the other hand are closely related to the Dimini ware of peninsular Greece. High pedestalled, round-bottomed and carinated bowls, sometimes equipped with lugs modelled to suggest an animal's head just as north of the Balkans, occur already at Sérvia ; later vases are sometimes provided with rudimentary wishbone handles, and at Olynthus even jugs were manufactured. Flat, waisted pebbles with parallels at Alişar ¹ and farther east and occurring already at Sérvia in period A, may, like flat whorls, have been used in a textile industry.

Shell bracelets, as on the Danube, and bone combs, as at Tordos, were used to beautify the person. A piece of obsidian from Sérvia, so translucent that it is thought by Heurtley to be Hungarian rather than Melian, is the sole evidence for extended trade. Stone vases were manufactured at Olynthus, but from local marble. However, clay imitations of Asiatic seals were current as in the Sesklo culture.

¹ van der Osten, *The Alishar Hüyük*, 1928-9, 67, fig. 80 ; Speiser, *Tepe Gawra*, 81.

Supernatural powers were conciliated by domestic cults for which female figurines of stone and clay, triangular and quadrangular tables or altars, as at Sesklo and Vinča, and also clay phalli as in Anatolia were manufactured. A contracted skeleton had been buried with simple offerings in a pit at Sérvia.

THE MACEDONIAN BRONZE AGE

But even while neolithic peasants were spreading the Vardar culture, new colonists were arriving from Anatolia to introduce a Bronze Age economy, with the so-called Early

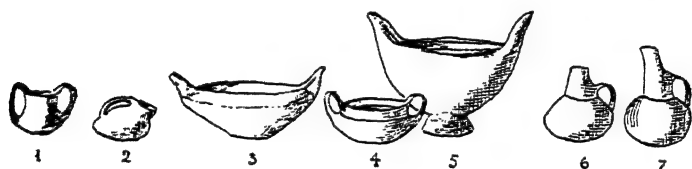


FIG. 40. Early Macedonian pot-forms. After Heurtley, *BSA.*, XXVIII.

Macedonian culture. At Kritsana in Chalcidice the later neolithic pottery occurs in the same strata as foreign wares of Anatolian ancestry, and some of the later neolithic pottery from Olynthus too may be Anatolian rather than Vardar.¹ The invasion is indeed attested by new architectural features (mud-brick houses with bothroi in the floors) and new types of stone implement (perforated axe-heads) as well as by the transformation in the potting and the introduction of a whole series of new forms—bowls with horned tubular lugs growing from the inverted rim, jugs with cut-away necks, askoi, handled cups and tankards (Fig. 40). All these forms are typically Anatolian; one demonstrably grew up there. In the earliest Early Macedonian bowls the tubular lugs are turned up at the ends—horned; in Lesbos this horned lug appears first in Thermi III, having grown up out of the simpler tubular lugs of Thermi I (Fig. 17). For once pottery indicates an irreversible movement.

The Anatolian settlers brought with them their knowledge of metallurgy; a crucible was found at Saratse, gold slag at

¹ So Heurtley, *P.M.*, 80, n. 3; Mylonas, *Olynthus*, 33, argues for a local origin.

Vardaroftsa. It has indeed been suggested that the colonization was actuated by a desire for the gold, silver, and copper ores of Macedonia. But the Anatolians did not implant in Macedonia their urbanized economy. They lived in small hamlets as simple peasants, like their neolithic forerunners. They were content with stone implements (perforated and unperforated axes) and weapons (sling-stones and hollow-based arrow-heads). Metal was very rare; only a couple of pins survive. Not even obsidian was regularly imported, though a few chips were found in the deepest level at Kritsana. Sherds of Corded Ware

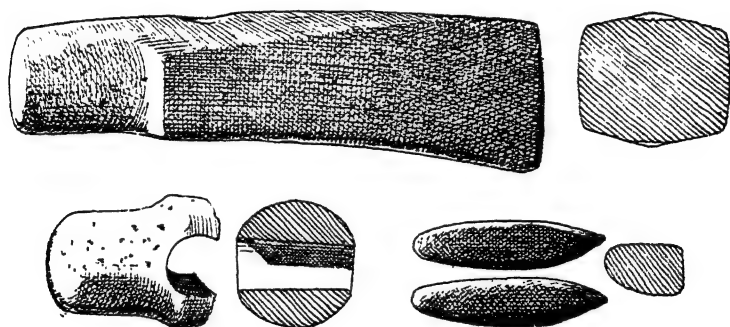


FIG. 41. Axe and battle-axes from H. Mamas. After Heurtley, *BSA.*, XXIX. (½.)

turned up at Kritsana, Hagios Mamas and Saratse, a heeled battle-axe of explicitly South Russian type (Fig. 41), and a necklace of bored-teeth and grooved bone beads at Hagios Mamas. These objects, together with the appearance of horses' bones, certainly indicate contact with the Battle-axe folk of the North European-Pontic plain. They offer limiting dates for more northern cultures; they may even symbolize the introduction of Indo-European speech. They denote an infiltration of warrior-bands rather than commercial relations.

Such obstinate self-sufficiency makes the chronology of the Early Macedonian Bronze Age peculiarly difficult. Thermi III is evidently a *terminus post quem* for its inception. A clay hook, found at Hagios Mamas, and a fragment from a face-urn from Vardaroftsa, establish vague synchronisms with Troy II; an imported sherd of E.H.III ware from the latest Early Macedonian settlement at Kritsana similarly establishes parallelism with developments in peninsular Greece. In any

case Corded Ware in Macedonia should be at least as old as in the E.H.III settlement at Eutresis.

The Early Macedonian culture develops slowly in its comparative isolation till the distribution of Minyan ware marks the beginning of a new phase, Middle Macedonian, which must not be too strictly synchronized with Middle Helladic. In the meantime the Early Bronze Age culture had assumed an individual Macedonian aspect. In the pottery the most distinctively Macedonian innovation is the "wishbone handle"—a wood type that remained characteristic of the region throughout subsequent periods. Notable, too, are indented lugs, similar to those of Palestine,¹ in the "Early Bronze Age" and two-handled tankards, intermediate between the Troadic-Early Helladic ones and the Perjámos type of the Early Bronze Age in the Middle Danube. Such tankards became popular only towards the close of the Early Macedonian phase. Whorls, as in contemporary Greek and Anatolian cultures, are generally conical or biconical. Figurines, so popular in Anatolia, were virtually abandoned in Macedonia. On the other hand, curious anchor-shaped ornaments of clay may have had a magical purpose.

In the absence of specialized industry and organized trade to absorb the surplus rural population, the Early Macedonians had to expand. They very soon filtered into Thessaly; in what used to be called neolithic periods III and IV there, culture was essentially Macedonian (jugs with cut-away necks and other Early Macedonian pot forms, wishbone handles, perforated axe-heads, anchor ornaments²). But the neolithic substratum shows through: figurines were still manufactured though they include males as well as females, and in Eastern Thessaly spirals and other designs were daubed on the vases after firing—what is termed "crusted ware". Perhaps the northern forms mentioned on p. 68 mean that Macedonians had reached Central Greece in E.H.III times. A small group of pots from the M.H.II level at Asine³ is recognizably Macedonian.

By the latter period Macedonians were established at Lianokladhi in the Spercheios valley, where they had learned

¹ LAAA., XXII, pl. XXXV, 5; Engberg and Shipton, *Chalcolithic Pottery of Megiddo*, type G.

² BSA., XXVIII (1926-7), 180-194.

³ Frödin and Persson, *Asine*, 280.

from Central Greek neighbours to paint in Middle Helladic matt-paint technique amphoræ, tankards and bowls with wishbone handles (all good Early Macedonian or Early Helladic shapes) with Macedonian patterns including pot-hook spirals (Fig. 42). A similar fabric appears with local "imitation Minyan" ware at Thermon in Ætolia during L.H.II (fifteenth

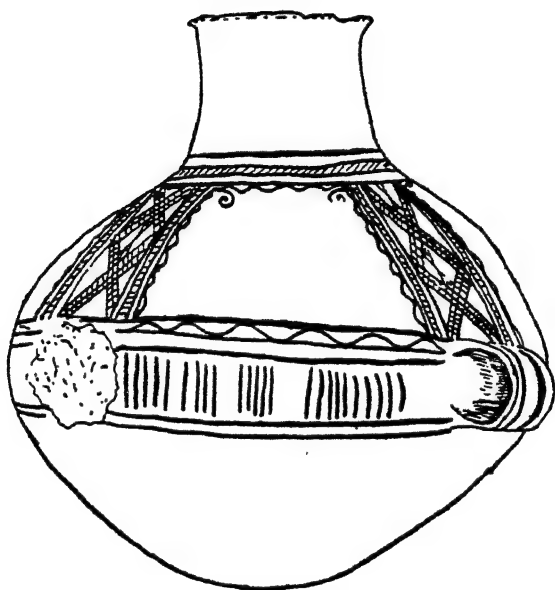


FIG. 42. Matt-painted jar, Lianokladhi III. After Wace and Thompson ($\frac{1}{2}$).

century) and even on Levkas. Heurtley has plausibly connected the makers of this fabric with the Dorians' ancestors.

In Macedonia itself the Middle Macedonian period may be considered to begin with the establishment at Molyvopyrgo on Chalcidice of a strongly fortified settlement where Minyan ware was manufactured extensively but mostly without the wheel. Here the fortifications and ring-stemmed goblets and other forms, strictly parallel to the Middle Helladic, suggest a settlement of fresh people. Nevertheless grey ware adorned with grooves occurs even in Early Macedonian settlements throughout the region. Hence Minyan might have arisen south of the Balkans after the arrival of the Battle-axe intruders or, since the Early Macedonians were themselves Anatolians, it

might have been brought from Asia in a perfected form by a fresh wave of immigrants to Chalcidice.

In the interior no sort of break is observable. The local potters maintained the old traditions though they revived spiral decoration and later learned to decorate their vases in matt paint, presumably from their Thessalian relatives.

It was not until the thirteenth century B.C. that Mycenæan trading posts were established on the coasts and Mycenæan potters brought even to inland villages the potters' wheel and the L.H.IIIb ceramic style. Within a century, before they had time to become cities, their settlements were destroyed by barbarian invaders. The latter's dark-faced, fluted pottery demonstrates their origin in the Danube basin, presumably in some branch of the Lausitz culture, from which sprang also the intruders in Troy VIIb.

THE VARDAR-MORAVA COMPLEX

Beyond the difficult passes over the Balkans the Vardar neolithic culture is continued at a series of sites in the Morava valley from Pavlovce,¹ some fifty miles south of Niš to the edge of the Danubian löss plains at Vinča on the south bank of the Danube below Belgrade. Even beyond the river a very similar culture appears both in Slavonia and again in the Banat and even in Transylvania, notably at Tordos in the Maros valley.² Here we have definitely reached the region of temperate forests. But the settlements exhibit superficially the same character as the Macedonian. They were permanent villages whose ruins after repeated reconstructions have formed regular tells. At Pločnik³ near Niš, the deposit is not over 3 m. high, but at Vinča it attains the formidable elevation of 10 m., while Tordos was twice rebuilt after floods.

Such tells ought to present a clear stratigraphical record of cultural development. In practice, however, the information to be extracted even from the extensive reports of Vassits' excavations at Vinča is very meagre. From the extant data changes in architectural, ceramic and ritual fashions can indeed

¹ *ASPRB.*, 12 (1936).

² Schmidt, *Vučedol*, 113-140; *BRGK.*, XXII, 33-6.

³ Grbič, "Pločnik" (Narodni Muzej v Beogradu preist. spomenitsi, I), 1929.

be detected at various levels at Vinča and Tordos. All efforts¹ to correlate these changes with one another and to use them to define distinct consecutive periods have so far proved fruitless.

Life was based on agriculture, stock-breeding, hunting, and fishing. The last named activity was especially important on the Danube, where sturgeon and other fish were caught not only with nets (the clay sinkers for which survive), but also with hooks and double-barbed harpoons (like Fig. 43) of antler. The earliest habitations at Vinča and at Starčevo may have been pit-dwellings half sunk in the löss like those described on p. 99; hence the lowest layers are sometimes termed "pit

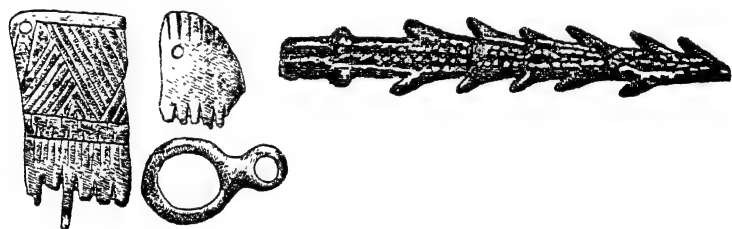


FIG. 43. Bone combs and ring-pendant, Tordos, and "harpoon", Vinča (1).

levels" by Vassits. But some of the pits were just silos, and rectilinear houses (not of "megaron" type) with vertical walls of wattle and daub supported by posts coexisted with pits from a depth of 8 m., and at other sites. Low vaulted ovens were constructed at Vinča² from 9 m. upwards and also at Pločnik.

Throughout all levels at Vinča and at all allied sites the carpenter's tool was a shoe-last adze of stone. Perforated celts were not normally used south of the Danube,³ but the stone adzes might be mounted in antler sleeves,⁴ and antlers might be perforated for use as axes or picks. Occasional whorls and loom-weights (Fig. 45) imply a textile industry. Bone spatulæ, like Fig. 45, were made at Tordos, Starčevo, Vinča, Bujanj

¹ By Childe, *Danube*, 26, and Menghin, *Weltgeschichte*, 252; justly criticized by Fewkes, *Proc. Am. Phil. Soc.*, LXXV (1935), 657, and *ASPRB.*, 12, 22 ff.

² *Preistorijskaya Vinča*, I, 14. (This work, of which four volumes have now appeared, will be cited, *P.V.*)

³ They do occur at Tordos, *Dolg.*, XII, fig. 11, and Lipovac on the Morava, *ASPRB.*, 12, 49.

⁴ At Pločnik.

and Pločnik. Weapons are rare, but arrow-heads and mace-heads occur sporadically at Vinča. Obsidian, apparently Hungarian, does not seem to have been found below a depth of 6.5 m.

The Morava pottery, most fully illustrated at Vinča, is astonishingly varied. In the deepest Vinča levels¹ and up to a depth of 7.4 m. rusticated or barbotine pottery, characteristic of the Körös group (p. 94) is prominent, as all up the Morava,² and may represent the earliest phase of neolithic culture here.

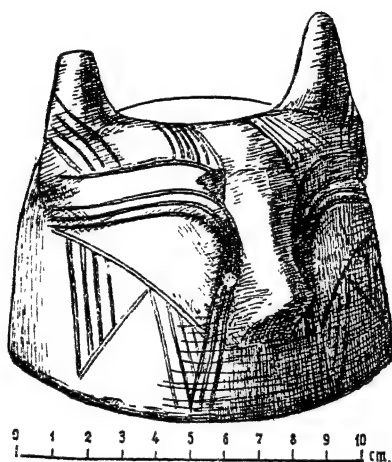


FIG. 44. "Face urn" lid from Vinča. After Vassits.

Yet black to red polished wares begin very early and continue through all levels of the tell. They include most of the varieties and forms already described as Vardar ware—fluted, stroke-burnished, incised, pedestalled and carinated bowls, lugs imitating animal heads. The incised wares are often unburnished, and the designs are generally formed by punctured ribbons and include spirals and meanders which, however, seem rare in the earliest Vinča levels.³ A puzzling group within the incised class is constituted by the anthropomorphic lids (Fig. 44), which resemble, though by no means exactly, those from Troy II. Such occur at Vinča even in the

¹ *P.V.*, IV, p. xv; *ASPRB.*, 12, 27.

² *ASPRB.*, 12, 56.

³ The earliest spiral at Vinča comes at 9 m. from top, *ASPRB.*, 12, 28, n. 115; they occur in Tordos I, *Dolg.*, XII, 49; cf. *WPZ.*, 1939.

pit levels, to the north at Csoka and Tordos and as far south as Pločnik.

Allied on the one hand to the local burnished wares, on the other to Macedonian and Anatolian fabrics, are widely distributed "red-slipped" wares, often black inside and round the rim. Sherds painted with patterns in black or white on a red ground, like the Olynthus ware, occur sporadically at all levels at Vinča,¹ in the first settlement at Bubanj and very commonly at Starčevo² just across the Danube. Painted ware was also in use at Tordos.³ There, if not at Starčevo too, vase painting began later than incision and rustication.

True handles were not in vogue either at Tordos or at Vinča (save for some late intruders). On the other hand short tubular spouts (as at Olynthus) were found at Vinča⁴ as low down as 8 m., and recur elsewhere while the lugs at Vinča seem to grow increasingly large and elaborate. In addition to these native Morava wares some quite typical Tisza vases from beyond the Danube were found at Vinča on a floor at a depth of 7.4 m., and again at 4.2.⁵ Crusted ware is reported from the same levels but the most convincing specimens illustrated⁶ occur as high as 3.2 to 2.9. On the other hand one sherd from a deep level (8.4) is said to belong to an imported vase of Danubian I "linear ware".⁷ Marble dishes too were used at Vinča from early times.

Toilet articles include bone combs from Tordos⁸ like that from Sérvia (Fig. 43), many bracelets of *Spondylus* shell, flat, waisted "knobs" of white limestone,⁹ and pieces of cinnabar. Clay stamps are presumably imitations of Asiatic stamp-seals.

Ritual objects, used in domestic cults, were made in profusion in all the villages. The figurines, all female, from the lower levels at Vinča are crudely modelled representations of a nude female. At depths of 7.7 m. and less the features are carefully delineated, though the head is conventionally flattened while incisions indicate clothing, including perhaps a loin-cloth,

¹ *P.V.*, II, pl. CXXII, and p. 132.

² Painted ware is said to begin later than barbotine, *ASPRB.*, 9.

³ *Dolg.*, XII (1936), 48; *BRGK.*, XXII (1933), 53, fig. 12.

⁴ *P.V.*, IV, pl. VI, sl. 26, c.

⁵ *P.V.*, II, 37, 187; IV, 53, 94

⁶ *P.V.*, II, 134.

⁷ *P.V.*, IV, pl. XIV, 44 h.; cf. Holste, *WPZ.*, 1939, 9.

⁸ *BRGK.*, XXII, 36.

⁹ Interpreted by Vassits as "idols", *P.V.*, II, 103; found also at Pločnik.

compared to the Minoan.¹ Some women are now seated, others nursing an infant. Male figures are found above 6·6 m. From about the same depth come vases in human and animal form.² Model tables and thrones, such as are familiar from Thessaly and Macedonia were used at all levels and all sites. A collective burial in a chamber tomb, cut in the löss, is assigned to an early level at Vinča,³ but similar chamber-tombs at Vučedol contained relics of the later Slavonian culture (p. 292).

To the Balkan environment the Vardar economy of sedentary agriculture combined with stock-breeding, hunting, and fishing constituted a workable adjustment that persisted with surprisingly little change even into historical times. A balance such as was only achieved progressively by development through three clearly defined stages in the more temperate environment of the Middle and Upper Danube basins (Chap. VII), had been already reached when the record of the tells begins and never involved such nomadic habits as there. Hence changes in equipment are not catastrophic nor easily grouped in "cultures". For a very long time stone adzes and other lithic tools remained in use so that culture looks neolithic at all levels. Yet the whole region is metalliferous⁴ and tiny objects of copper turn up even in the deep levels at Vinča. It has indeed been argued⁵ that the Anatolian elements already noticed, if not the introduction of food-production itself, were due to prospectors seeking gold, copper, cinnabar, and other raw materials.

Eventually ceramic innovations at some sites do suggest that some of the "Anatolians" who had initiated the Early Macedonian Bronze Age had filtered across the divide to mingle with the earlier population. At Bubanj, a hill-top settlement close to Niš,⁶ the first settlement, defined by Körös and painted wares, was succeeded by Bubanj II in which appear two-handled tankards like the Early Macedonian and cups with handles rising high above the rim. In the same level, IIa, occur some graphited and white on black painted wares and

¹ Childe, *Danube*, fig. 35.

² P.V., I, 43, sl. 89; sl. 113.

³ P.V., II, 9-14; Schmidt, *Vučedol*, 41.

⁴ Gaul, *AJA.*, XLVI, 400-9, maps the distribution of ores and tools.

⁵ e.g., Childe, *Danube*, 34.

⁶ *Mitt. prähist. Kommission Akad. Wissens.* Wien, 1940, IV, b., 1-2.

others with fluted or channelled patterns including spirals. Later in IIb crusted and polychrome painted wares are reported. Perforated hammer axes of stone and mace-heads, and flint axes and arrow-heads now appear for the first time. Near by at Pločnik similar handled tankards and jugs have not been separated stratigraphically from such common Vinča types as anthropomorphic lids, but five stone adzes were associated in a hoard with 13 flat copper adzes and a hammer-axe like Fig. 53, 1.

At Vinča itself layers above 3.40 yield relics of the "Baden" culture.¹ This explicitly succeeds the Morava culture at Šarvas and Vučedol in Slavonia where it is explicitly associated with moulds, furnaces and other evidences of local metallurgy. It is closely allied to that of Bubanj II and may be equally Anatolian. But its authors did not establish regular commerce either with the Aegean or the Upper Danube basin. Hence there is no recognizable counterpart in Yugoslavia to that Early Bronze Age we term "Danubian IV". Only in the topmost strata at Vinča² and in Bubanj III do we find tankards and cups such as characterize the Middle Bronze Age—Period V—in Hungary.

The relative isolation of the province after the well-attested early contacts with the Aegean and Anatolia impedes the establishment of any convincing chronology. Bubanj II ought of course to be approximately contemporary with the advanced phase of Early Macedonian and with crusted ware in Thessaly III. The earlier Vardar-Morava continuum must have been established before the beginning of the Macedonian "Bronze Age". In view of the pedestalled bowls and the stroke-burnished ware from Kum Tepe (p. 35) and Alishar and from Vardar sites it might begin before the foundation of Troy I and Thermi I and be parallel to the early spread from Asia Minor that brought neolithic culture to Crete (p. 17). Once the continuum were established the use of spirals and other Danubian features might have spread back to Greece, for instance as a result of those seasonal migrations postulated on p. 80 while the technique of vase painting and the idea of the stamp seal (*pintadera*) could have been transmitted northward in the same way from Thessaly. The Vardar culture

¹ WPZ., XXVI (1939), 14; Milošević in BSA., XLIV (1949), 258-306.

² Vassits, PV., II, 135; IV, figs. 200-4.

should then be at least as old or older than Neolithic B in Greece.

On the other hand many authorities including Frankfort¹ and Tompa would attribute the late neolithic of Greece and Macedonia and presumably also Kum Tepe and the Chalcolithic of Alişar to a southward expansion of Danubian peasants. The great objection to such a view lies in the difficulty of explaining the introduction of cereals and domestic animals into the Danube basin and of finding there any population to create a neolithic culture if these requisites were introduced. No mesolithic population, descended from Old Stone Age hunters, has yet been discovered in the Middle Danube basin.² Yet such hunters had undoubtedly lived in Hungary and Transylvania as in Moldavia³ and Bulgaria.⁴ Hence Krichevskii⁵ has suggested that in post-glacial times while some developed the fishing collecting economy here termed "mesolithic", those on the fertile löss turned instead to hoe-cultivation; *Einkorn* at least probably grew in the Balkans to be cultivated, and there may have been wild sheep to domesticate as well as boars and oxen. On the other hand Coon's⁶ studies of a very inadequate series of Danubian skulls lead him to attribute them to a variety of Mediterranean, physically unlike the palæolithic and mesolithic Europeans.

Whatever its age and however constituted, the existence of the Vardar-Morava culture conclusively establishes, if not the diffusion of culture from the Ægean to the Middle Danube basin, effective opportunities for such diffusion. Moreover it illustrates admirably the principle of cultural zoning. In the Vardar valley a Bronze Age economy was established in the third millennium; even the ceramic industry was industrialized during the second. North of the Balkans neolithic self-sufficiency was maintained much longer, and the potters' wheel was introduced only late in the first millennium.

¹ *Studies*, II, 40.

² Fewkes, *ASPRB.*, 12, 17 and 66.

³ *Dacia*, V-VI, 7 ff., 23 ff., 50 ff.

⁴ *ASPRB.*, 1939, 46.

⁵ "Mezolit i neolit Evropy," *KS.*, IV.

⁶ *Races*, 105-6.

CHAPTER VII

DANUBIAN CIVILIZATION

PERIOD I

IMMEDIATELY north of the Serbian Danube and the Save begin löss-clad plains and slopes which extend, not without formidable interruptions, right up to the edge of the moraines in Poland, Germany, and Belgium. These Central European löss lands had been frequented in Aurignacian and Solutrean times by mammoth and reindeer hunters, but mesolithic successors of such food-gatherers survived only among the post-glacial forests on the northern and western fringes. To food-producers, the löss lands, naturally drained, not too heavily wooded and easy to till, offered a domain where they could practice the simplest conceivable sort of farming. With unstinted water supplies and seemingly boundless territories the peasant was free to shift his hut and break fresh ground as soon as his former fields showed signs of exhaustion. And in fact we find prevailing throughout Central Europe a system of nomadic cultivation that does look really primitive—such as the earliest food-producers, undisciplined by environmental limitations, might be expected to invent.

The cultures¹ based upon this economy exhibit considerable uniformity throughout the löss lands. Though the temporary nature of the settlements excludes tell-formation and the stratigraphical chronology derived therefrom, the cultural sequence is well established. Throughout the area three main periods can be recognized before the Early Bronze Age which coincides with period IV. In period I we can distinguish three main groups: the Körös culture in south-eastern Hungary and the Banat, the Bükk culture in north-eastern Hungary and Slovakia, and the Danubian I extending from Western Hungary to the northern confines of the löss.

THE KÖRÖS CULTURE

The Körös culture² is itself just one component of that disclosed in the very deepest layers of Vinča—or shall we say

¹ For points not otherwise documented see Childe, *Danube*.

² Kutzian, "The Körös Culture," *Dissertationes Pannonicae*, ser. II, No. 23 (Buda Pest, 1944-7).

the Vinča culture stripped of refinements, that presuppose settled life. It was based on breeding cattle, goats, sheep, and pigs, nomadic agriculture, hunting, and fishing. The hunters relied on pit-falls and perhaps arrows tipped with double-pointed bone heads, the fishermen chiefly on nets. The settlements were tiny clusters of huts, interspersed between all sorts of pits and generally situated on the banks of streams or lagoons. The framework of the simple trapeze-shaped huts

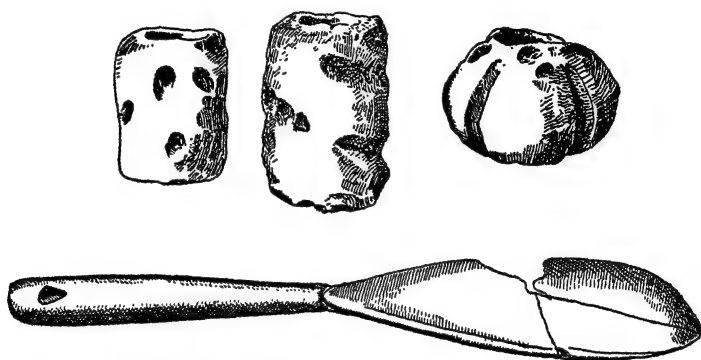


FIG. 45. Clay loom-weights ($\frac{1}{2}$) and bone spatula ($\frac{1}{2}$) of Körös culture.

of wattle and daub was formed of two pairs of poles slanting inwards to support the ridge-pole.¹

Whorls and loom-weights (Fig. 45) attest a textile industry. The commonest carpenters' tool is the shoe-last adze, as in all "Danubian" cultures and the Morava culture; it might be mounted in antler sleeves. But stone axe-heads were perforated with a hollow borer and antlers were perforated too. Bone spatulæ were manufactured as at Vinča and Starčevo. The potter could produce a variety of distinctively ceramic forms equipped with flat bases or even stand-rings, but not with true handles. Instead of rings some vases stand on four nipple-like feet or have a quatrefoil base. Characteristic forms are hemispherical bowls, globular narrow-mouthed jars and curious bottles flat on one side with rows of lug handles on the other; the latter are evidently intended to be carried on the back. Decoration is normally effected by rustication precisely as at Vinča and Starčevo, but a few Körös vases are adorned with

¹ *Dolg.*, IX-X, 75.

representations of men, cattle, or stags modelled in low relief.¹ Such figural relief ornament survives locally on Tisza vases of period II and recurs at Vinča and Tordos. The resemblance of the modelled figures to those adorning Early Bronze Age vases from Cyprus and Hittite vases from Alişar is very striking. At the same time a resemblance between the barbotine pottery covered all over with finger-nail and finger-tip impression, some of the patterns thus formed and even the big globular jars to the earliest neolithic pottery of South Italy cannot be denied. Red-slipped pots sometimes adorned with white paint, from some Körös settlements near Hodmezövásárhely, may be imports from the Vardar province (e.g. from Starčevo).

Trade was sufficiently developed to enable the plainsmen to obtain mountain rocks for querns and adzes, North Hungarian obsidian for knives, and even armlets of *Tridacna* and *Spondylus* shell from the Mediterranean. So too they imitated in clay Asiatic stamp-seals²; one from Hodmezövásárhely-Kotacpart, being rectangular and decorated with a filled cross, is a peculiarly faithful copy of the favourite Central Anatolian form.

Much of the ritual apparatus of the Vardar-Morava was conserved—clay figurines of women, triangular altars, and libation tables (i.e. small bowls on four feet). The dead were buried with scant ceremony and few, if any, gifts, contracted in refuse pits between the huts.

The attribution of the Körös group to period I is not yet quite certain. Körös hut-ruins have been disturbed by graves of period III.³ Körös sites occupy an area that would be otherwise blank on a map of period I and that is occupied in period II by the Tisza culture. And at Vinča imported Tisza pottery⁴ appears stratigraphically later than the rusticated wares, bone spatulæ and libation tables of the Körös culture.⁵ On the other hand clay stamps belong farther north to period II.⁶ Nor is it clear whether we should regard the Körös folk as members of the Vardar-Morava communities who had broken

¹ *Dolg.*, XIII (1937), 45–8.

² *Dolg.*, XI, pl. XVII, 4–6.

³ *Dolg.*, IX–X, 76.

⁴ *Marburger Studien*, I (1938), 30.

⁵ *Dolg.*, XI, 122; *BRGK.*, XXIV–V, 51.

⁶ But these are further removed from the Anatolian models.

loose to follow an easier, if less refined, life on the plains or aboriginal food-gatherers who had adopted some elements of the Vardar culture. Their range lay essentially east of the Tisza from the Danube northward to the Körös. But even in the Danubian I culture farther to the north-west Körös elements will be found so that the Körös group may disclose the intermediaries through whose agency neolithic culture was transmitted to the more westerly löss belt.

BÜKK CULTURE

Though its territory was contiguous to that of the Körös group, the Bükk culture¹ does not obviously illustrate the transition from the latter to the classical Danubian I. On the other hand it is so closely allied to the Danubian I, to be described below, that only the divergencies need be emphasized here. Its economy was based on farming but combined with hunting and fishing (by means of hook-and-line as well as nets). Caves were extensively used as habitations, but, according to Hillebrandt,² mainly as winter shelters; in the summer their occupants would have hunted and fished on the Tisza plains. The usual Danubian shoe-last adze is combined with hollow-bored stone axes and perforated antler axes. The potters sometimes imitated gourd vessels as in Danubian I, but at other times followed leather models as in the Troad. Moreover, they gave some vases tubular spouts and mounted bowls on hollow pedestals in the same form as the classical vases of period II, or on model human legs as at Thermi. The ornamentation is based on the Danubian spiral system, highly elaborated, but it is executed with very fine incisions. And the Danubian motives may be combined with conventional indications of a human face or even a complete figure in the West Anatolian manner.³ Moreover, in addition to grey wares clear buff vases were produced and decorated with spiral designs in black paint applied before firing. The Bükk people controlled the obsidian deposits of the Hegyalya near Tokay and presumably exported the material which they certainly utilized.

¹ *Arch. Hung.*, V-VI, 19-38; *BRGK.*, XXIV-V, 32-9.

² *AE.*, XLIV (1930), 301; cf. *AE.*, 1943, 22.

³ *Arch. Hung.*, V-VI, pls. XVIII, 5; XXIV, 13.

The chronological position in period I of the Bükk culture should be fixed by a burial at Nagytetény (Pest) furnished with Bükk I and late Danubian I vases and by the stratigraphy of Tallya (Zemplén), where early Bükk pottery occurred in a layer below Tisza sherds of period II.¹ But the Bükk culture, as defined by the pottery, certainly lasted into period II² and then formed an integral constituent of the Tisza culture. The relations of the painted Bükk ware to those of Starčevo and Ariuşd and of the pedestalled bowls to those from the last two sites and the Danubian II culture remain debatable.

DANUBIAN I CULTURE

The löss lands west and north of the Danube were first occupied by a neolithic population whose whole culture down to the finest details remains identical from Hungary to North Germany and from Galicia to Belgium.³ This is the best known culture in Central Europe and perhaps the most classically neolithic in the ancient world. Hence the term Danubian I may be legitimately applied to it in preference to the clumsy and inaccurate terms "linear pottery" or "spiral-mæander" culture.

The Danubian I economy was based on the cultivation of barley, *Einkorn*, and perhaps also emmer⁴ wheats, beans, peas, lentils and flax, in small plots tilled with stone hoes. Only small herds of stock were kept; a few bones of sheep, oxen, and pigs turn up in the settlements, but animal dung was never incorporated in hut walls as is usual where the farmyards are well stocked. To hunting the Danubians made no resort. Danubian I settlement sites are dotted very densely all over the löss lands, but none shows evidence of prolonged occupation. That is a result of the Danubians' crude agricultural technique, one still illustrated by some hoe-cultivators in Africa to-day.

¹ *AE.*, XLIX, 86 and 70.

² *Dolg.*, XII, 49.

³ For the distribution in Hungary, *BRGK.*, XXIV-V, 30-2; *AE.*, XLIV, 30 ff.; in Poland and East Germany, *Bl. f. d. Vorg.*, VII (1930), 18-52; for the rest of Germany, Buttler, *Donau.*; for Bohemia, Stocký, *Boh. Préh.*; for Belgium, *Bul. Soc. r. Belge d'Anthrop. et de Préhistoire* (Brussels, 1936), XII, 25-106.

⁴ Emmer is reported only from the Rhineland and Belgium, bread wheat from Poland alone; both might have been borrowed from other populations. Cf. *BRGK.*, XX (1930), 30.

They cultivated a plot till it would bear no more, and then another, and so on until they had used up all the land round the hamlet ; thereupon they shifted bag and baggage to a new site not too far distant.

The details of the process that must have gone on all over the province are known from the excavation of Köln-Lindenthal.¹ The first structures erected at a new site were barns, presumably put up by inhabitants of a hamlet a couple of miles away. After a time the cultivators themselves removed their houses and their families to the vicinity of their new fields. Some twenty-five pit-dwellings were constructed, some of the granaries shifted, and the whole group of buildings eventually

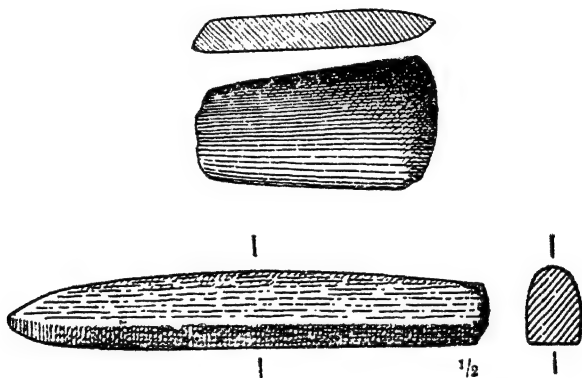


FIG. 46. "Shoe-last celts." After Seger ($\frac{1}{2}$).

surrounded with a trench and palisade to keep out wild beasts. And then after a time the villagers abandoned the site which lay desolate till at length it was reoccupied by a kindred group using rather different pottery. The process thus documented explains how and why the Danubians spread over such a vast area ; they simply had to move on to new land every ten or twenty years.

This simple method of getting a livelihood is, of course, incompatible with refinements or the accumulation of capital. Houses so soon to be abandoned must not be over elaborate. The Danubians allegedly lived in complex pit-dwellings—excavations dug 18 to 30 inches into the löss over an irregular

¹ Buttler und Habery, *Das bandkeramische Dorf Köln-Lindenthal* (*Römisch-Germanische Forschungen*, 11, Berlin, 1936).

oval area 10 to 35 feet long, and covered over with a wattle and daub superstructure supported by stakes bordering the excavation. It now seems more likely that the real Danubian I houses were rectangular structures, supported by five rows of stout posts and attaining at times lengths of 90 ft. and widths of 20.¹ Such had formerly been designated "barns."

The rest of the Danubians' equipment was equally home-made. Shoe-last celts of stone (Fig. 46) served, if mounted on knee-shafts, as hoe-blades and adzes, or, if perforated, as axes and hammers. Knives, sickles and scrapers were made of flint. No whorls nor loom-weights attest a textile industry ;

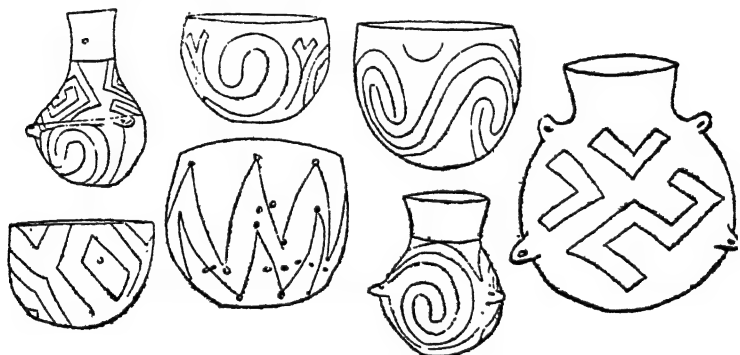


FIG. 47. Danubian I pottery (30).

the flax found at Köln-Lindenthal may have been grown for oil. At Stattenice in Bohemia,² a bone implement like the spatulæ of the Körös was found.

Two sorts of pots (Fig. 47) were manufactured—hemispherical bowls and globular bottles (some flattened for carrying on the back)—provided with 3, 6 or 9 lugs and clearly derived from gourd models. The resemblance is often enhanced by zig-zag incised lines reproducing the slings in which gourds are carried. But instead of skeuomorphic patterns the peasants often incised on their vases the continuous spiral and mæander designs that are regarded as distinctively Danubian. Some designs, perhaps late, suggest human figures, double-axes, and

¹ *Germania*, XXVI (1942), 84-103 ; cf. XXI (1937), 213, 217.

² Stocký, *Boh. Préh.*, 62.

other objects. And some coarse vases were just rusticated as on the Körös. Lugs may be modelled to resemble animals' heads as on the Vardar and the Morava, while the incised double-axe patterns may be inspired from Crete or North Syria,¹ but probably belong in to Danubian II.

In principle this economy was essentially self-sufficing. But in practice materials had to be carefully selected and often transported over long distances. The green schist, used for adzes at Köln-Lindenthal, must have been brought 60 or 70 miles from the Hunsruck or the Taunus; Niedermendig lava from near Mayen was used for querns in Belgium.² Such partiality for selected materials, without destroying self-sufficiency, encouraged intercourse between distinct communities. In fact, a few vases, made from local clays in the Main valley, were transported to Köln-Lindenthal, 50 miles away. Moreover, in Moravia, Bohemia, Thuringia and even the Rhine valley ornaments made from the Mediterranean *Spondylus* shell were worn as in Thessaly and on the Middle Danube; they must have been handed on by some sort of inter-tribal exchange from the Ægean or the Adriatic! So too African ivory reached Flamborn near Worms.³ The interchange of goods, thus disclosed, developed into something like regular trade. Particularly on the borders of the Danubian province in Brandenburg, Holstein, and West Prussia hoards⁴ of shoe-last adzes turn up. Like the later hoards of bronzes these must be the stocks of specialized travelling merchants. Individuals must already have been at least supplementing their livelihood by satisfying the Danubians' prejudices in favour of selected materials and extending their activities to other still mesolithic tribes. Such were surely the forerunners of the bronze-merchants described on p. 116. And workshop debris in villages⁵ may indicate even industrial specialization within a community.

The Danubians were a peaceful folk. The only weapons found in their settlements are disc-shaped mace-heads, such as had been used by the predynastic Egyptians, and occasional flint arrow-heads. They were democratic and perhaps even

¹ *IPEK.*, XI (1936-7), 16 f.; *PA.*, XL (1934-5), 3.

² Buttler, *Donau.*, 32.

³ Buttler, *Donau.*, 36; *Marburger Studien*, I, 27-9.

⁴ *JST.*, XXIII (1935), 73; *Bl. f. d. Vorg.*, VII, 51; Buttler, *Donau.*, 21.

⁵ *Germania*, XXII, 220.

communistic ; there are no hints of chiefs concentrating the communities' wealth. Nor did deities fulfil that function. A few female figurines of clay have survived, but nothing like the multiplicity of ritual objects noted at Vinča and in Macedonia. Few graves have been discovered. The dead were generally buried in the contracted position, more rarely cremated. The skulls examined are all dolichocranial and in a general sense "Mediterranean". One from an Alsatian cemetery had been trephined.¹

A first clue to the origin of the Danubians is given by their pottery ; they must have learned potting and translated preceramic gourd vessels into clay in some region where gourds harden. That does not happen north of the Middle Danube plain, which is accordingly near the northern limit of their possible cradle. To this extent a southern origin for the Danubians is almost universally admitted. In Germany a centre in Czechoslovakia is assumed by most authorities. But here no mesolithic population is known, nor cereals for them to cultivate. And the Danubians' traditional preference for Mediterranean shells should indicate a more southerly cradle. Several speculative theories could be framed : (1) the Danubians came from the Mediterranean or Anatolia, but made no pots as long as they could use gourds and so have left no traces of their presence till they reached Hungary. (2) The overflowing peasant population of the Morava sites, advancing still farther northwards, dispensed with superfluous refinements till their culture was reduced to the bare minimum just described. (3) A still undiscovered mesolithic stock acquired from the Morava or from the Körös peoples, cereals, tame sheep, the potters' art and other "neolithic" traits. The solid fact is that the Danubian I economy is two stages lower down the scale than that of the Vardar-Morava, just as it is two stages farther away from the Ægean.

PERIOD II

THE TISZA CULTURE

In South-Eastern Hungary and adjacent regions the Körös culture gives place to another, adapted particularly to exploiting the fish and game abounding in the Tisza and its tributaries.

¹ *Germania*, XXVI (1942), 177-181.

At the village of Kőkénydomb,¹ the dwellings—rectangular houses measuring up to 7·2 m. by 3·4 m., entered through the long side and decorated with painted clay models of bulls' heads—were strung out in a single row along the river bank. The fisherman now employed harpoons of antler (Fig. 43) (as at Vinča) and double or triple rings of bone in addition to nets.² Stock-breeding and agriculture still provided the basis of life. Grain was stored in large clay jars or rectangular vessels, 70 cm. by 50 cm. by 65 cm. in volume and exactly like the wooden bins used locally to-day.³

The general economy remained neolithic. The materials for axes were drawn from the Banat, Transylvania, and Northern Hungary, but obsidian was no longer imported. Shells were still imported from southern seas and typical vases were exported to Vinča and Silesia (p. 89), but clay "stamp seals" were no longer used.

Pots, including cylindrical jars and large oval bowls, suitable for cooking fish in, may be provided with indented lugs like the Early Macedonian and short tubular spouts as in the Bükk group. They are decorated with coarse incisions in a thick slip, supplemented by crusting in red and yellow, forming mæanders, concentric circles, and conventionalized faces, but not spirals; the designs are grouped in vertical panels.

Clay figurines were no longer manufactured, but rattles in animal form may have been used in ritual. The dead were buried flexed in small cemeteries, some after amputation of the feet. Shell or marble buttons with shanks were sometimes worn as brow ornaments.

DANUBIAN II CULTURES

A contemporary but less specialized series of cultures extends from the Drave⁴ and the Upper Tisza to Lower Bavaria, Central Germany, Silesia, and Galicia.⁵ Though less homogeneous than Danubian I, these cultures in view of their wide dispersion may be grouped together under the common

¹ *Dolg.*, VI (1930), 50-150; cf. *PZ.*, XXI, 185 f.; *AE.*, 1943, 22.

² *BRGK.*, XXIV-V, 43; *Dolg.*, VI, pls. III, VI.

³ *AE.*, XLV (1931), 253.

⁴ *Germania*, XXII (1938), 215-8.

⁵ Buttler, *Donau.*, 38-43; *PZ.*, XXI (1930), 6-10; *WA.*, XIV (1936), 190.

name, Danubian II ; the term Tisza culture, introduced by Tompa ¹ and accepted by some Germans too, to replace the old designation Lengyel-Jordansmühl, must be reserved for the group last described which is quite distinct.

The Danubian II economy combined stock-breeding, and probably also hunting, with cultivation. But explicit evidence for the use of the plough is lacking. And the settlements are scarcely more permanent than those of Danubian I, but were shifted periodically like the latter. The peasants did, however, build rectangular houses entered through the narrow end and ornamented, like those of the Tisza group, with clay bulls' heads. Commerce, as in Danubian I, is most clearly attested by the importation from the south of *Spondylus* and *Tridacna* shells. North Hungarian obsidian was distributed all over the

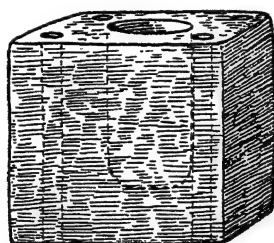


FIG. 48. Clay block vase, Strelče I, Moravia (§).

Middle Danube basin and northward to Moravia, Western Galicia, Silesia, and Bohemia, but in the northern districts it is found only in the earliest settlements as if stocks had been brought by the colonists, but not subsequently replenished by trade. Cubical blocks of clay, perforated at the corners, in which one, or exceptionally two, cups have been hollowed out ² (Fig. 48) have been claimed as copies of Early Minoan block vases of stone. Clay imitations of stamp seals are attributed to the later phase of the period in Moravia, and by that time copper trinkets began to be distributed in Moravia and Silesia (Fig. 49, 1).

Besides shoe-last adzes, triangular greenstone axes (Fig. 49, 2), hollow-bored axe-hammers and antler axes were employed. A few spheroid mace-heads and flint arrow-heads

¹ BRGK., XXIV-V, 40 ff.

² Schráníl, *Böhmen*, 50 ; cf. p. 33 here.

and, in Bohemia, stone arrow-straighteners,¹ may point to warlike behaviour. Whorls and loom-weights attest a textile industry.

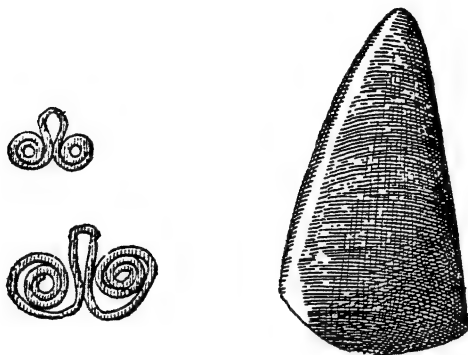


FIG. 49. Copper trinkets ($\frac{1}{2}$), and triangular axe ($\frac{2}{3}$), Jordansmühl. After Seger.

Characteristic pot forms are hollow-pedestalled bowls (Fig. 50, 1), ladles with socketed handles (Fig. 50, 2), biconical jars (Fig. 50, 3), and variants on the older bottles. Bowls are

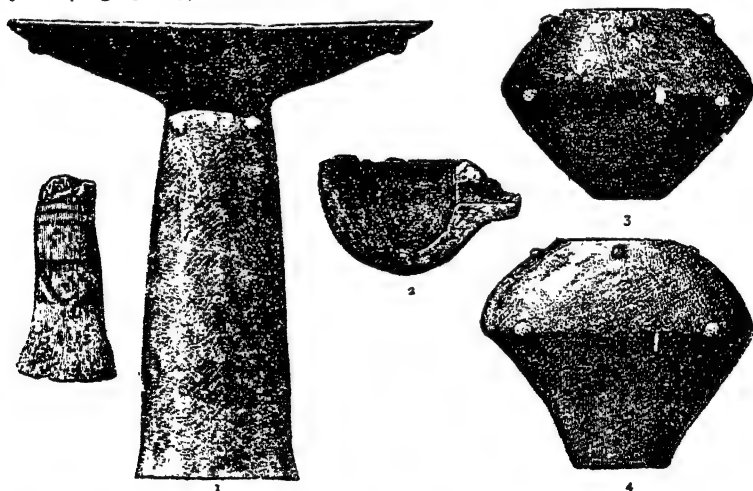


FIG. 50. Danubian II pottery, Lengyel. 1, 3, 4, ($\frac{1}{2}$); 2, ($\frac{1}{3}$).

flat-bottomed and often carinated, but inturned rims do not occur till the end of the period. Handles remain unknown. In

¹ *PA.*, XXXIX (1933), 50-3.

Moravia¹ the earliest vases were decorated with spirals, mæanders and basketry patterns, incised and painted after firing in white, red, and yellow (generally termed crusted ware). In a second phase, defined stratigraphically in Moravia, white paint alone was employed on a fine burnished red ware, but some red-ware vessels are covered with a white slip and painted in red before burnishing and firing, just as in Thessalian A. In a still later phase which is alone represented in Silesia, Bohemia, and Bavaria, coloured decoration went out of fashion, and only low bosses adorn the vase surface.

For domestic fertility cults, similar to those practised in Greece and in the Vardar-Morava complex, the Danubian II people made female figurines, models of animals and doves and zoomorphic vases. The dead were sometimes buried, flexed, in small cemeteries. One near Pécs comprised seventy-eight graves scattered about in eleven groups.² In late graves in Bohemia and Central Germany the bodies had been cremated. Cattle too were given ceremonial burial in Silesia.

Comparisons with the Ægean and Anatolia offer ambiguous possibilities for dating period II. The resemblances of crusted ware to that of phase C in Thessaly, of the indented lugs on the Tisza to Early Macedonian and of clay stamps and block vases to Early Minoan forms, suggest a date round about 2500 B.C. for the period's beginning. On the other hand pedestalled bowls very much of Danubian II form go back to the fourth millennium in the chalcolithic of Alişar and at Kum Tepe; the red on white painted sherds from Moravia recall equally ancient Thessalian fabrics, and a Macedonian neolithic pot from Olynthus shows a panelled decoration rather in the Tisza manner. On this evidence 3300–3000 would seem just as plausible as 2500–2200 as the historical dates of period II.

DANUBIAN I SURVIVALS IN THE NORTH

The expansion of Danubian II farmers, like that of their precursors in Danubian I, was a slow process. Indeed it had begun while Danubian I folk were still spreading down the Oder, the Elbe, and the Rhine valleys. Since period II begins with the emergence of the Danubian II and Tisza cultures in the

¹ Vildomec in *Obzor Præhist.*, VIII, 1–43.

² *Arch. Hung.*, XXIII (1939).

Middle Danube basin, we may say that Danubian I cultures survived in the north into period II. In fact they outlasted even that period in remote places. Moreover, the Danubian I expansion did not take place *in vacuo*. In the hill countries between the Danube and the Rhine and in Thuringia, along the rivers of the North European plain and on the sand-dunes of Silesia and Poland, still lived scattered groups of Tardenoisian,

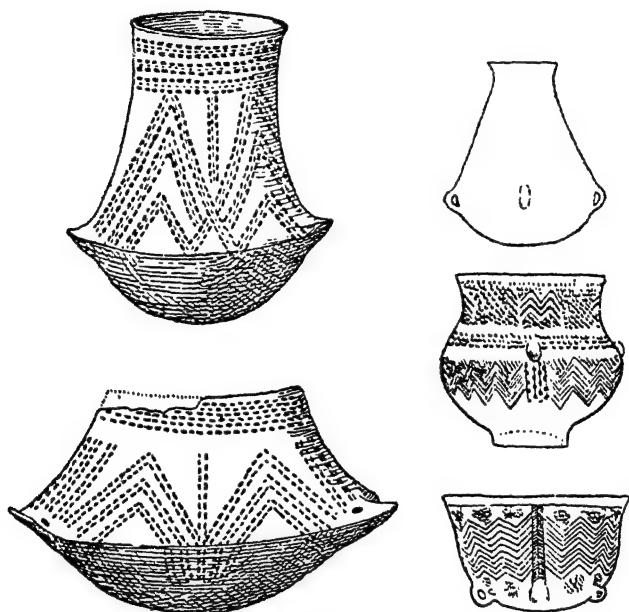


FIG. 51. Stroke-ornamented vases, Bohemia ($\frac{1}{3}$, $\frac{1}{4}$) ; Rössen vases, Central Germany ($\frac{1}{10}$).

Maglemosean and Swiderian food-gatherers. Some of these were absorbed into Danubian communities or copied the Danubians' way of life. Thus arose various cultural groups,¹ essentially Danubian in economy, and equipment, but diverging from the norm in details, particularly in ceramic art. Hence the groups are defined by their pottery. And most flourished in period III too.

(1) *Stroke-ornamented ware* (*Stichbandkeramik*) (Fig. 51) distinguishes a group which arose probably in Bohemia and

¹ Buttler, *Donau.*, 29, 45.

spread thence back into Moravia, and into Bavaria, Central and East Germany in the wake of the Danubian I groups, and under pressure from the same economic forces. Economically it differs from Danubian I only in a tendency to supplement farming by hunting for which transverse arrow-heads of Tardenoisian ancestry were employed. The arrow shafts were straightened on grooved stones as in the Danubian II culture and farther east.¹ The pots were still round-bottomed, but were decorated exclusively with skeuomorphic zig-zag patterns composed of ribbons executed by a series of distinct jabs instead of continuous lines. In Bohemia, Bavaria, and Central Germany the dead were cremated. In Moravia and Poland stroke-ornamented ware occurs in late Danubian II settlements, and at Gleinitz in Silesia an imported Tisza vase was found with stroke-ornamented ware.² Late stroke-ornamented ware was even found associated with a Globular Amphora of period III. Hence the culture it defines begins sometime in Period II and persists throughout the period.

The Rössen group arose in Central Germany³ probably through the adoption by Forest folk of the culture of the last-named group, and spread thence to the Rhine valley. Though the Danubian agricultural economy had been taken over entire, hunting retained much of the importance that it had enjoyed in the ancestral Forest culture. The increased competition for land, due to the rise of this and other new groups of cultivators, may by now have led to war. The Rössen people were the first in the Rhine valley to fortify their settlements, while weapons—transverse and hollow-based arrow-heads, disc-shaped mace-heads and the old perforated antler-axes of the Forest folk—were relatively common. The Rössen folk lived in rectangular houses with vertical walls and gabled roofs supported by three rows of earth-fast posts,⁴ and they also erected rectangular granaries. But their settlements were no more permanent than those of the preceding groups. Their pots are hemispherical or globular in profile, but are often provided with stand-rings and are decorated with rectilinear

¹ *PA.*, XXXIX (1933), 50-3.

² Buttler, *Donau.*, 60; *Altischles.*, III (1931), 153.

³ The theory of its derivation from the North-West German Megalith Culture, long dominant in Germany, was refuted by Stocký, *Boh. Préh.*, 161, and more conclusively by Buttler, *Donau.*, 44.

⁴ *Germania*, XX (1936), 229-243; cf. Fig. 134 here.

patterns imitating basketry, and executed in stab-and-drag technique (Fig. 51, 2). As ornaments the Rössen folk wore marble bracelets, disc-beads of shell, bored tusks and deers' teeth, and marble buttons identical with those from Lengyel. The dead were buried in the contracted attitude.

The buttons of Danubian II type from the graves at Rössen in Central Germany prove that the group even there belongs to period II, while on the Isar, in Alsace, and in the Wetterau, Rössen house-foundations have disturbed the ruins of those left by later Danubian I peasants. On the other hand, on the Goldberg, in Württemberg, the Rössen village was succeeded by a settlement of the Western Michelsberg culture that generally belongs to period III. Hence Rössen flourished in period II.¹

The Danubian I peasants themselves persisted, wandering about during period II and in the Rhine basin even into period III, preserving their culture intact, but not unaffected by the example of their neighbours and rivals. Even in their pottery they preserved the old forms and the spiral-mæander as the basis of their decoration ; but the patterns tend to break up and are embellished with punctuations, comb-impressions and other devices. Plastic suggestions of a human face from Köln-Lindenthal, in the manner of Trojan face-urns, may belong to this phase.²

Even in Central Germany the later Danubian I pottery is associated with the stroke-ornamented ware of period II, on the Maas in Holland even with Beaker-ware³ which must belong to period III. Such late Danubian I people reoccupied the deserted site of Köln-Lindenthal. The new village was in all essentials like its predecessor ; but it was larger, comprising thirty-five houses, so that population had increased ; it was provided with a cattle-pond, as if stock-raising had become more important, and it had in the end to be protected by a defensive stockade. Pressure on the land was becoming serious. In addition to the natural increase of the population and the competitive groups resulting from the conversion of food-gatherers into cultivators, new groups were spreading from the south-east and from the west.

¹ Buttler, *Donau*, 62.

² Buttler, *Donau*, 31.

³ *Germania*, XXI, 5.

PERIOD III

By period III the natural growth of peasant populations, the conversion to food-production of food-gathering communities, and immigrations of fresh tribes from beyond the löss lands, had produced a pressure upon the soil that entailed adjustments in everyday life. Inferior lands above the löss were exploited; hunting and pastoralism became more important economically, and in fact in the temperate zone they would be more productive than hoe-agriculture. Settlements were often planted on hill-tops as well as in the valleys and were frequently fortified.¹ Competition for land assumed a bellicose character, and weapons such as battle-axes became specialized for warfare. The consequent preponderance of the male members in the communities may account for the general disappearance of female figurines. Part of the new surplus population may have sought an outlet in industry and trade; imported substances such as Baltic amber, Galician flint and copper begin to be distributed more regularly than heretofore. Warriors would appreciate more readily than cultivators the superiority of metal, and chiefs may already have been concentrating surplus wealth to make the demand for metal effective. Its satisfaction was none the less dependent on the diffusion of the requisite technical knowledge, whether by immigrant prospectors or captives, from the south-east.

A general picture of the period in the löss lands would present a bewildering variety of small conflicting groups. Some of these are admittedly intruders and can be better described elsewhere. From the West, Michelsberg folk (p. 285) spread as far as Upper Austria, Bohemia, and Central Germany, while Beaker-folk (p. 218) reached the Danube near Buda-Pest and spread across Germany and Czechoslovakia as far as the Vistula. From the Pontic-North European plain warriors using battle-axes and cord-ornamented pottery spread as far as Bavaria, Bohemia, and Moravia and even into the Middle Danube basin. In other groups there is an injection of types (collared flasks, globular amphoræ, and so on) which we shall find in Chapter X to be genuinely Northern. But these hardly suffice to demonstrate a large scale "Nordic" invasion of the Danubian province. We shall describe here only certain

¹ e.g. Homolka in Bohemia, *Proc. Am. Phil. Soc.*, LXXI (1932), 357-392.

cultures which remain essentially Danubian even though they may be found in hill-top forts or in caves.

The *Bodrogkeresztur* culture is the successor of the Danubian II and Tisza cultures east of the Middle Danube from Hungary to the Banat. Its communities, known mainly from cemeteries, would seem to have been larger than any hitherto discovered; at the patent station the cemetery comprised at least fifty graves, at Jaszladány forty, at Pusztatváánháza thirty-two.¹ Double graves in which one body has been buried with rich furniture, the other with none, suggest a cleavage of society into classes. Trade is attested by flints imported from Galicia,

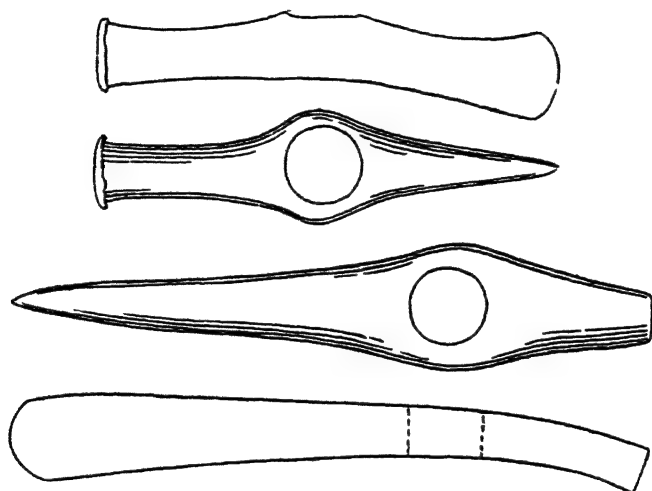


FIG. 52. Copper battle-axes, Hungary (†).

a few objects of gold and several of copper. The latter metal is represented in the cemeteries by two or three rhomboid knife-daggers without midribs or rivet-holes, several quadrangular awls, a flat celt (adze), an axe-adze, and a battle-axe.² A number of similar battle-axes found stray (Fig 52) demonstrate the warlike character of even Danubian culture in period III. Such copper weapons must rank as translations of the antler axe, inherited from mesolithic times, and prototypes for the stone battle-axes which are not attested in

¹ *Arch. Hung.*, IV; *AE.*, XLI (1927), 50-7; *WPZ.*, XIII, 30; *BRGK.*, XXIV-XXV, 53.

² *PZ.*, XXII, III; *AE.*, 1944-5, 16.

Hungary at this stage. Stray flat adzes and axe-adzes (Fig. 53) are even more common. Evidently copper was extensively worked and doubtless mined in the province and the industry helped to absorb the enlarged population. Were the miners and smiths immigrants? And if so, did they come from South Russia or Anatolia? Hillebrandt¹ maintains that the metal industry was autochthonous. None of its products has been demonstrably cast; implements like Fig. 53, 1, could be

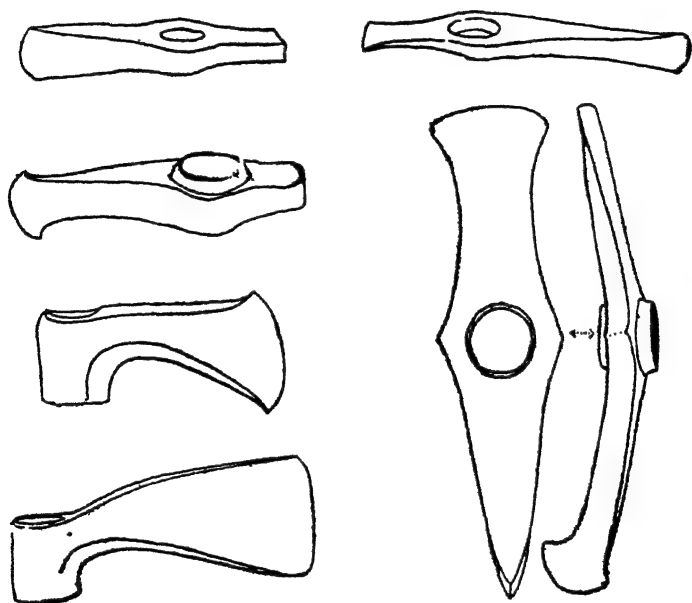


FIG. 53. Copper axe-adzes and axes, Hungary (1).

regarded as translations of the Danubian stone axe-hammers; the flat adzes copy shoe-last celts, the battle-axes antler axes. Still the pottery indicates a fresh impulse from the Ægean area, indeed an extension of that more explicitly reflected on the Morava in Bubanj II.

Technically Bodrogkeresztur pottery carries on the later Danubian II tradition and the high-pedestalled bowl remains a popular form. The most distinctive new type is the long-necked milk-jug (Fig. 54). But two-handled tankards and a

¹ *Arch. Hung.*, IV (1929), 49.

globular pyxis with string-hole lid¹ (Fig. 54, 1) must be inspired by Anatolian or Ægean models. Comparisons of the pot-forms and battle-axes with those of Alişar Chalcolithic or Troy I could be used to justify a date about 3000 B.C. for period III on a long chronology, but naturally do not establish anything like a strict synchronism.

The contemporary cultures west of the Danube are more conveniently treated in Chapter XVI. To the north we have the "Baden Culture".



FIG. 54. Bodrogkeresztur pyxis and milk-jug. After Tompa (†).

Baden is liable to be a blanket name for a rather heterogeneous series of cultures that succeed Danubian II in the Middle² and Upper³ Danube basins, in Czechoslovakia⁴ and on the Upper Vistula.⁵ Their authors often lived on fortified hill-tops or in caves and, though cultivating *Einkorn* and common wheat³ and hunting, kept large flocks of sheep as well as cattle and pigs. The horse was already domesticated³ and

¹ BRGK., XXIV-V, pl. XVIII, 8.

² Ibid., p. 50; *Dolg.*, XI (1935), 126; Patay, "Korai bronzkori kultúrák Magyarországon" *Dissertationes Pannonicae*, S. II, No. 13 (Buda-Pest), 1938, 12-19; Schmidt, *Vütedol*, 140-4.

³ Bayer, "Die Ossarnen Kultur," *Die Eiszeit* (Vienna, 1928), V, 87 ff.

⁴ Stocký, *BP.*, 115; Schráníl *Böhmens*, 66; Böhm, "Zur Frage der Endphase der donauländ. Kultur," *Altböhmien u. Altmähren*, I (1941), 37 ff.

⁵ *W.A.*, XII (1933), 140-167.

controlled with a bit terminating in cheek-pieces of antler.¹ Clay models of animals further emphasize the importance of pastoralism, clay spools, just like those from Troy II, an active textile industry. But triangular flint arrowheads and stone battle-axes gives the cultures a martial aspect. The dead were sometimes cremated, more often buried in the contracted posture. Houses were nearly square as in Thessaly A.^{1a}

The ceramic forms include bowls divided into two compartments (on the Danube),² cups and jugs with strap handles rising above the rim sometimes crested (as in Fig. 79, 4) or with subcutaneous string-holes.³ The decoration is generally channelled⁴ but in Hungary this may be combined with incised and punctured ribbons as in the Morava culture.⁵ While many forms and techniques can be regarded as Danubian, channelled decoration was popular still earlier on the Vardar and the high handles point to Bubanj II and across the Balkans.

In fact *Spondylus* and *Tridacna* shells were still imported. Moreover, though metal was too rare to be used even for weapons, several graves in Lower Austria⁶ were furnished with neck-rings of twisted wire with recoiled ends—the immediate precursors of the cast ingot torques of period IV, but most closely resembling some from Ahlatlibel near Ankara. Stray double axes from Moravia and Lower Austria, attributed to this complex by Hawkes,⁷ being asymmetrical, could also be compared to a weapon from this site as well as to the better known Minoan type. Hence one decisive influence in moulding the new complex should be the extension of that Anatolian current detected at Bubanj. But other influences have been deduced from the pottery: subcutaneous stringholes for instance will meet us again in the Apennine Peninsula. The rougher pots have Western analogues in Michelsberg and Altheim (pp. 285, 290). Cord-ornament is not unknown. On Bohemian and Moravian sites vase forms proper to the Northern cultures, such as collared flasks, occasionally occur. From the latter observation and general similarities, Menghin and others have deduced a "Nordic" conquest of the Danubian province.

¹ *Dolg.*, XV (1939), 166. ^{1a} Böhm, *Kronika*, 198.

² *AE.*, 1942, 75.

³ Childe, *Danube*, Figs. 45, 73, 74, 71.

⁴ Hence Stocký called Baden the Channelled Ware culture.

⁵ *Dolg.* IX-X, 44-52.

⁶ *W.P.Z.*, XXIV, (1937), 16.

⁷ *BSA.*, XXXVII, 144-6.

Krichevskii¹ has, however, well shown how the "Northern" analogies can be adequately explained by the internal economic and social development of Danubian societies. The wide contacts noted would be a natural consequence of the resultant emphasis on warlike and seminomadic pastoralism. What cannot be denied is the fructifying influence from the south that may already have been transmitted from the Adriatic as well as the Ægean coasts.

The torques suggest that the Baden culture flourished not long before the dawn of the Bronze Age in period IV, and give limiting dates between 2700 and 1700 B.C. On the other hand, at Kiskörös between the Danube and the Tisza a Bodrogkeresztur grave had been dug into a recently abandoned Baden hut foundation,² so that on the Middle Danube the culture must begin early in period III.

Jordanšmühl, a cemetery of fifty-seven graves in Silesia,³ gives its name to a northern facies of Danubian III culture. The flexed skeletons were accompanied by high-pedestalled bowls deriving from Danubian II, two-handled tankards (Fig. 88), and bowls with inverted rims related to Bodrogkeresztur types. The late date of the large settlement is indicated by the relatively large number of metal trinkets, including spectacle-spirals (Fig. 49, 1) and cylindrical armlets of copper ribbon. Precisely similar copper ornaments, together with bracelets of *Spondylus* shell or engraved bone and disc-beads of shell, were found in the cemetery of thirty-eight graves at Brześć Kujawski on the middle Vistula in Poland.⁴ But the characteristic high-pedestalled bowl was missing here. On the contrary in the foundations of houses, some of which seem contemporary with the cemetery, sherds of late Danubian I character came to light. The houses were trapeze-shaped and attained a maximum length of 39 m., the entrance being through the wide end which normally faced south. The martial character of the settlers is emphasized by battle-axes of stags' antler accompanying every male interment. The copper ornaments and the disc-beads, identical with those from

¹ "The Indo-German Problem solved archæologically," *IGAIMK.*, 100 (1930).

² *PZ.*, XXII, III.

³ *AfA.*, V, 136 f.; *SV.*, VII, 1 f.; for the synchronism with Bodrogkeresztur, see Buttler, *Donau.*, 43.

⁴ *WA.*, XV (1938), 1-105.

Bodrogkeresztur graves in Hungary, guarantee the attribution of the cemetery to period III. But here in the north trade had not yet been sufficiently developed to permit of the regular translation of the antler weapons into copper as was happening in Hungary. However, the distribution of remains, comparable to those from Brześć Kujawski, coincides with that of the earliest stray copper implements from Poland so that these Danubian pioneers must have been instrumental in diffusing copper-working northward towards the Baltic coasts. The copper spectacle-spirals from Jordansmühl and Brześć Kujawski might well have been inspired by gold ones such as are so common in Troy II (Fig. 22) and could be used as further arguments for the Anatolian origin of Danubian III metallurgy and for the lower date deduced from the Baden neck-rings. On the high chronology they must rank as the forerunners of the Trojan ornaments. In any case even on a short chronology corded ware, proper to period III in the Danube basin, but introduced into Greece in E.H.III, should give 2000 B.C. as a *lower* limit for the period's beginning.

PERIOD IV

THE EARLY BRONZE AGE

During period III the growth of population was calling for a new economy and making labour available for industry and commerce. War was stimulating a demand for metal, and chiefs were accumulating capital; the prejudices of immigrant warriors had to be satisfied with trade-goods from the Baltic and Galicia. The Bell-beaker folk (pp. 218-224 ff.) established regular communications with the West and North and opened up new connections with the Mediterranean across the Brenner Pass. At the same time metallurgists trained in Anatolian or Caucasian traditions had begun exploiting the copper and gold of the Balkans, Transylvania and Slovakia. A new economy was thus made possible; it was realized in period IV. The Early Bronze Age economy of Central Europe, while still based on farming, hunting, and fishing, could support specialized miners and smiths and traders to distribute their products.

No actual mines can be dated by direct evidence to period

IV, but there are indications that the copper lodes of the Tyrol-Salzburg field, demonstrably mined during period VI, may have been exploited by surface workings as early as period IV (p. 291). Equally early exploitation of copper lodes near Saalfeld and of Vögtland tin has been deduced from recent analyses.¹ Moulds have been found in several settlements but do not necessarily belong to resident smiths.

The distribution of the industry's products was effected by a regular class of itinerant merchant-artificers. Their routes are defined by hoards of finished and half-finished articles—the merchant's stock in trade—that had been buried when danger threatened and never recovered. They show that the merchants were following ancient Danubian traditions (p. 100) and that they dealt also in amber, gold, and presumably substances such as salt that leave no trace in the archæological record. The amber routes are particularly well defined: the fossil resin was brought from Jutland and East Prussia to the Saale valley and thence passed on through Bohemia and across the Brenner to Upper Italy and the Ægean, while a little was diverted across Moravia to the Hungarian plain and the Maros.² A counterpart to this export trade is certainly to be seen in segmented and cruciform beads of Egyptian or Ægean fayence³ common in the cemeteries round Szeged and found sporadically also in Lower Austria⁴ and Moravia.⁵

The activities of these merchants linked up the whole of Central Europe into a single economic system with ramifications across the North Sea, to the Baltic and to the Ægean. The types of metal ware, especially of ornaments, which they diffused from the beginning of the Early Bronze Age produce a superficial appearance of uniformity throughout the Danubian province. At the same time the arbitrary ornaments reveal the source of the new chemical knowledge, the alloy of copper with tin, on which the new economy was based: ingot-torques (Fig. 57, 11), lock-rings with flattened ends, racquet pins have explicitly Sumerian prototypes⁶; knot-headed pins (Fig. 55, o)

¹ *Nbl.f.d.V.*, XIV (1938), 71 ff.

² It is found only in graves 2 and 211 at Szöreg and 14 at Deszk.

³ Erroneously termed "shell" or "clay" beads by Banner. *Dolgozatok*, VII (1931), 21, nos. 16-17; cf. *AJA.*, XLIII, 16.

⁴ *Germania*, XXI (1937), 89.

⁵ At Nemčice and Jiríkovec (near Brno).

⁶ Childe, *NLMAE.*, 193; *AJA.*, XLIII (1939), 17.

appearing in predynastic Egypt¹ recur later at Troy and in Cyprus: the basket-shaped earrings of gold wire (Fig. 55, 4) are detached members of the Trojan ornaments shown in Fig. 22, 1. The first bronze-smiths producing for a Central European market had been trained in Asiatic schools and

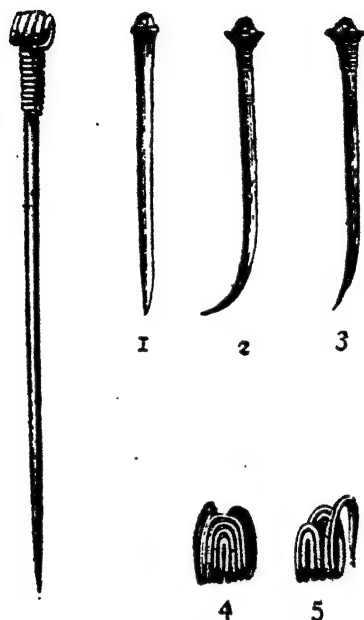


FIG. 55. Pins and earrings from Unétician graves. After Schráníl (†).

had introduced, together with the secret of bronze, Oriental fashions in personal adornment.

The new metal tools and weapons introduced at the same time were neither distributed so uniformly in the Danubian province nor so immediately inspired by Asiatic models. The flat axe which at Thermi had been provided with flanges by hammering (p. 37) was translated in Bohemia into the flanged axe cast in a two-piece mould (Fig. 57, 1). But in Hungary a shaft-tube axe of Sumerian ancestry (Fig. 53, 5-6), possibly transmitted via the Caucasus rather than from Anatolia or Greece where the type is missing,² was preferred. The universal

¹ Brunton, *Badarian Civilization*, pl. LIV, 9.

² Dullo, *PZ.*, XXVII (1936), 150, derives these from Crete.

weapon was the round-heeled knife-dagger (Fig. 56). Its bone or wooden hilt was hollowed at the base like the bronze hilt of the rather later dagger shown in Fig. 58, an old Egyptian trick

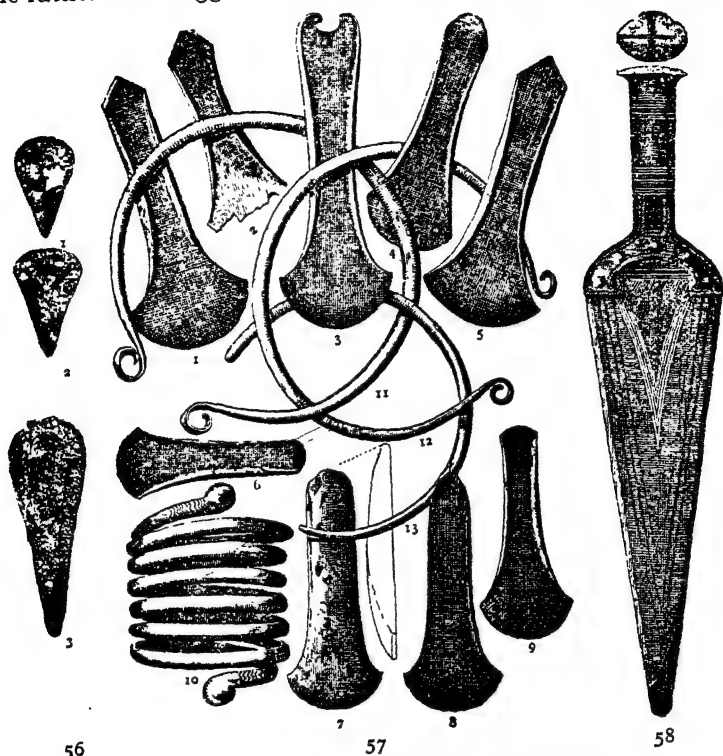


FIG. 56. Daggers from Unétician graves ($\frac{1}{4}$).

FIG. 57. Hoard of Sobochleby ($\frac{1}{4}$).

FIG. 58. Bronze-hilted dagger ($\frac{1}{4}$).

All after Schráníl.

never popular in Asia nor Greece, but traceable in Central, as in Western, Europe, on the flat-tanged daggers of the Bell-beaker folk during period III. Halberds¹ were used in Germany and Lower Austria and occasionally even in Hungary, but not in Bohemia. The type is supposedly West European, and reached the Danubian province from Ireland or from the Iberian Peninsula.

The unity created by the metallurgical industry and commerce had no political counterpart. It was imposed on a

¹ *PZ.*, XXV, 130-142; *Arch.*, LXXXVI (1937), 222-5.

number of distinct communities with distinct cultures—those called after the sites of Perjámos¹ on the Maros, Tószeg² near Szolnok on the middle Tisza, Gáta in Western Hungary, Unětice (Aunjetitz) in Bohemia and Straubing in Lower Bavaria are the best known—asserting their independence not only by local peculiarities in pottery and metal ornaments, but even by divergencies in economic status.

In the Middle Danube basin new settlements were founded in period IV on sites chosen primarily with a view to commerce where natural routes intersect at a ford or pass mouth.³ And these settlements were permanent townships occupied so long that their ruins form tells. Cemeteries of contracted skeletons no less clearly attest a sedentary life; that at Szöreg near Szeged comprised 220 graves, 180 attributed to period IV and the rest to period V. But even these communities were more nearly self-sufficing villages than industrial cities. Bone and stone were still used for implements and even battle-axes; metal toilet-articles such as girdle-clasps were imitated in bone. The pots were hand-made, but the slipped and polished vases, red, black, or mottled, recall Anatolian and Iberic fabrics. Hour-glass mugs and jugs, recalling Early Macedonian but perhaps derivable from the local Bodrogkeresztur types, are the most characteristic Perjámos shapes, but an isolated sauce-boat⁴ seems to copy the Early Helladic form. Besides reproducing the general types already enumerated, the local bronze smiths copied Hittite lunate pendants and Ægean heart-shaped ones, but did not develop the flanged axe nor the variety of local ornaments that came into fashion farther north. Indeed in Hungary archaic forms of ornament tended to persist so that the typological division of the Hungarian Bronze Age is very precarious.

North of the Bakony and the Carpathians neither tells nor cemeteries comprising over a hundred graves attest a really sedentary life. Though manifestly larger than in period III, the Early Bronze Age communities retained the same rustic character. Yet in this region owing to the proximity of the Erzgebirge and trade across the Brenner with the Ægean the metal industry developed most luxuriantly. By the extended

¹ *Dolg.*, VII (1931), 1-53; *BRGK.*, XXII, 84-8.

² *BRGK.*, XXIV-XXV, 65 ff.

³ *PZ.*, XXII (1931), 33, n. 39.

⁴ *BRGK.*, XXII, 87, fig. 17.

use of casting, the celt was equipped with high flanges for use as an axe-head and the knot-headed pin was translated into the distinctive Bohemian eyelet-pin (Fig. 55, 2). Amber, gold, and Mediterranean shells were freely imported, but fayence beads

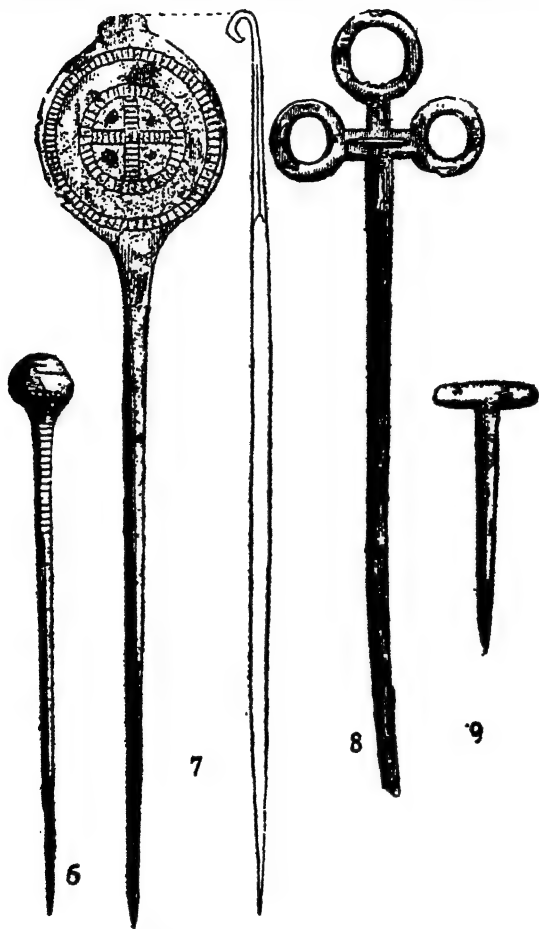


FIG. 59. Bulb, disk, trilobate and crutch-headed pins from later Unětician graves. After Schráníl (†).

are rare and the segmented variety (like Fig. 151) is not found north of Brno.

The hand-made pots agree in fabric with those from Perjámos, but the most distinctive shapes were at first pouched jugs and mugs sometimes decorated with cord-impressions or

incised lines (Fig. 60).¹ Then in the classical phase of Unětice (IVb) these are transformed by flattening out the belly into keeled mugs and jugs. Neumann² has analysed the constituents of Unětician pottery into elements derived from the Bell-beaker and Corded ware groups and a southern component. His analysis summarizes the constitution of the whole culture. Bell-beaker folk established the requisite commercial connec-

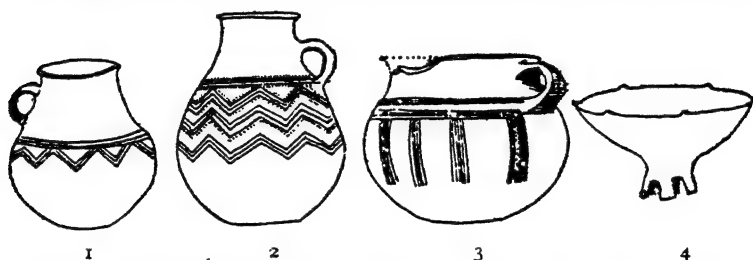


FIG. 60. Marschwitz and early Unětice pottery, Silesia and Bohemia. After Stocky.

tion, Battle-axe folk made the demand for metal effective, metallurgists from the south provided the technical foundations.

Exact copies of Oriental types appearing simultaneously in period IV offer an opportunity for dating the period in terms of solar years, and most chronologies of prehistoric Europe have taken them as the starting point. But of course the age in Asia of models copied in Europe gives only a *terminus post quem* for the copies. Recent discoveries have raised these limits unexpectedly. All the types mentioned on p. 115 were current in Egypt or Mesopotamia by 2600 B.C., when bronze was already known in the Orient. Period IV might then begin by 2600. So, too, vases of the Vattina type,³ which succeed the Perjámos ware in period V, are strikingly like cantharoi with quatrefoil lip and grooved handles from Middle Minoan Crete and the Shaft Graves of Mycenæ, while the rapier distinctive of the period is a weapon current in the Ægean from M.M.II on. Finally the fluted pottery locally characteristic of period VI is related to the wares brought to Macedonia by the destroyers of the late Mycenæan settlements about 1100 B.C. Hence a

¹ These used to be attributed to a distinct Marschwitz culture and to period III.

² *PZ.*, XX, 128.

³ *BRGK.*, XXIV-XXV, pl. 28, 1, 2; cf. *PZ.*, XXV (1934), 140.

long chronology placing the beginning of the Bronze Age about 2600 B.C. is defensible.

On the other hand all the Oriental types relied on for dating that period enjoyed a long life. Most ingot-torques and knot-headed pins in Syria or Cyprus can be dated between 2000 and 1700 B.C.¹; the remaining types persisted even later in the Caucasus. The rise of the Central European bronze industry might well be connected with the extension of the amber trade to the Ægean, attested first in the Shaft Graves of Mycenæ about 1600 B.C. The halberd and round-heeled dagger from the same tombs² strengthens this supposition; the imported fayence beads from Unětician and Perjámos graves go some way to confirm it. The segmented beads from Moravia and Hungary are said to be identical with some from an Egyptian tomb dated about 1400 B.C.³ Violin-bow safety-pins, such as appear in Greece in the thirteenth century, have been reported from Unětician tombs in Bohemia⁴ and Lower Austria. These safety-pins would at least show that the Unětician culture outlasted period IV as usually defined.⁵ On the whole a short chronology would appear the more probable. Period IV should begin not earlier than 1700 B.C. and the lower of the alternative dates offered for previous periods should be chosen.

But whether Perjámos and Unětica are to be compared with early Sumerian civilization or with early Mycenæan, they must rank several stages lower in the cultural scale. Economically they are far behind the Anatolian townships that preceded Troy II or the Middle Helladic settlements in Chalcidice. At the beginning of the Bronze Age Central Europe was not only behind Hither Asia, but separated therefrom by a regular series of descending grades of culture.

¹ *Marburger Studien*, I (1938), 13-19; Schaeffer, *Stratigraphie*, 24, 58, 546.

² So Åberg, *Chron.*, III, and Reinecke, *Germania*, XVII (1933), 12.

³ *Arch.*, LXXXV, 224; *AJA.*, XLIII (1939), 23.

⁴ Schráníl, *Böhmen*, 101; *CISPP.*, 1932, 242; in the Tyrol similar fibulæ are Late Bronze Age.

⁵ Böhm, *Základy Hallstattské Períody v Čechách*, 1937, 40; *PPS.*, XIV (1948), 177-9.

CHAPTER VIII

THE PEASANTS OF THE BLACK EARTH

BELOW the Iron Gates and east of the Carpathians, forested plains, cut by the Lower Danube and many other rivers, stretch from the Balkans to the Dnieper. The forests sheltered herds of deer, wild pigs, and even elks, and the lakes and marshes that interrupt them were breeding grounds for wild fowl. But the rich soil, now the famous black earth, was well adapted for agriculture. And so there arose here a series of cultures richly equipped materially, ritually, and artistically, but all based on farming and hunting. All share many traditions with the Morava-Tisza-Danube complex farther west—the carpenters' preference for the adzes instead of axes, the artists' love of spirals and mæanders, the popularity of female figurines. All perhaps were indebted to the mesolithic Forest folk, not only for hunters' equipment, but also for antler axes and sleeves. But the only indication of cultural grading such as we observed in Chapter VII is that the settlements in the Lower Danube basin were stable enough to form tells while in Moldavia and the Ukraine such concrete evidence for the continued occupation of the same site does not exist.

THE THRACIAN COPPER AGE

In Wallachia, Dobrudja, and North-Eastern Bulgaria the lowlands are studded with tells, marking the sites of prehistoric hamlets. Similar tells spread southward into the valleys of the Tundja and the Upper Maritza, but cease abruptly there as if the responsible villagers had entered Bulgaria¹ from the Danube valley; direct links to the Ægean coasts are lacking. The tells are all small, but sometimes quite high. Tangaru in Wallachia measures 90 by 50 m. and 10 m. in height; Kodja-Dermen near Shumen is 60 m. in diameter and 6 to 7 m. high. The stratigraphy of Tangaru and Vidra near Bucuresti

¹ Mikov, "Predistoricheski Selishcha v Bulgariya," in *Izdanja na Narodni arch. Muzei*, VII, Sophia, 1933 (map).

establishes for Wallachia a sequence of cultural phases ¹ which does not, however, seem applicable south of the Danube.

The oldest culture, named after an island site on the Danube, *Boian A*, is already based on farming combined with hunting and fishing. Millet as well as wheat was cultivated. As dwellings, substantial rectangular houses walled with split tree-trunks and wattle and daub were erected and equipped with central fire-places and a very shallow porch, thus approximating to the megaron plan.² These are said to have been preceded by less substantial huts at Tangaru. Weaving is attested by clay loom-weights and cruciform whorls, like those used on the Körös. The carpenter used adzes of shoe-last form

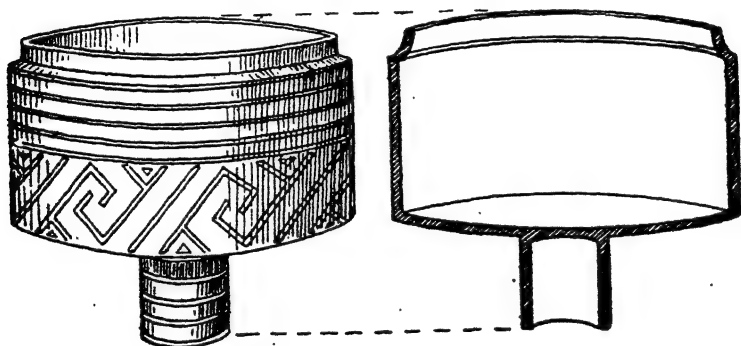


FIG. 61. Peg-footed vase, Denev (†).

or bevelled as in the Sesklo culture of Thessaly. But they might be mounted in perforated antler sleeves as at Maglemose.

The home-made pots are obviously influenced both in form and decoration by wooden models. Characteristic are cylindrical peg-footed boxes (Fig. 61), big biconical jars, two-storeyed urns, ladles with solid handles, and tiny vases with pointed bases that stood in pairs on cubical supports. Exceptional are pedestalled bowls of Danubian II form and others on human feet. For decorating these products the potter employed the wood-carver's technique of excision, but also incision, fluting, rustication, and, exceptionally, negative painting in graphite, and crusting with colours after the firing; spirals and mæander motives underlie the decorative system.

¹ Nestor, *BRGK.*, XXII (1933), 54 ff.; cf. *PZ.*, XIX, 110 f.

² *Bul. Muzeu. Jud. Vlasca T. Antonescu*, II, 1937, fig. 3.

The Boian farmers were acquainted with copper, but used it only for small ornaments and made no attempt to organize regular supplies for industrial use. The only other indication of rudimentary trade is provided by bracelets of *Spondylus* shell which were as popular on the Lower Danube as in Thessaly and Central Europe. And as there, triangular and quadrangular altars were made for domestic cult, but clay figurines, later so common, were not manufactured; perhaps their place was taken by wooden effigies that have perished.

Typical peg-footed boxes from Denev (Salmanovo) prove that the Boian culture extended into Northern Bulgaria, excised ware from Deve Bargan may indicate that it had spread even to the Maritza. And a contracted burial near Sfântul Gheorghe is claimed as evidence for a spread northward along the Alt into Transylvania.

Krichevskii¹ like Hawkes,² has rightly insisted that the cultural connections of Boian lie immediately in the west and indeed a version of the Morava culture with painted ware of Starčevo type has been traced by Gaul as the earliest neolithic at least in western Bulgaria. Direct Aegean or Anatolian influence is explicitly attested only in the next phase.

The Boian culture seems to have developed, though not without enrichment from Anatolia, the Aegean, and the Middle Danube, into what Roumanian prehistorians term the *Gumelnița* culture. This is represented at a larger number of sites in Wallachia and Bulgaria than the Boian A culture owing to the foundation of new villages by an expanding population. And it endured a long time; at least three phases can be distinguished stratigraphically at Vidra and Tangaru, but the Wallachian divisions are inapplicable in Bulgaria.

The basis of life remained unchanged save that antler harpoons, like those of the Morava and Tisza sites, were now employed for spearing fish. But from the first a tendency to industrial specialization was manifested; in several settlements hoards of flint blades and bone tools, all fresh as if designed for barter, were uncovered. Later, in phase III, metal must have been worked by craftsmen in some sites.

Trade was also organized to some extent. In phase I at Vidra the material for stone implements was brought from

¹ *KS.*, VIII (1940), 56.

² *Foundations*, 97.

Bulgaria and the Dobrudja, later from Transylvania and the Banat. Commerce brought actual manufactures, new ideas and eventually new technical processes. A binocular vase of the Tripolye A style from Moldavia or farther north and a vessel ornamented with punctured ribbons, as at Tordos and Vinča, were brought to Vidra in phase I. From the same

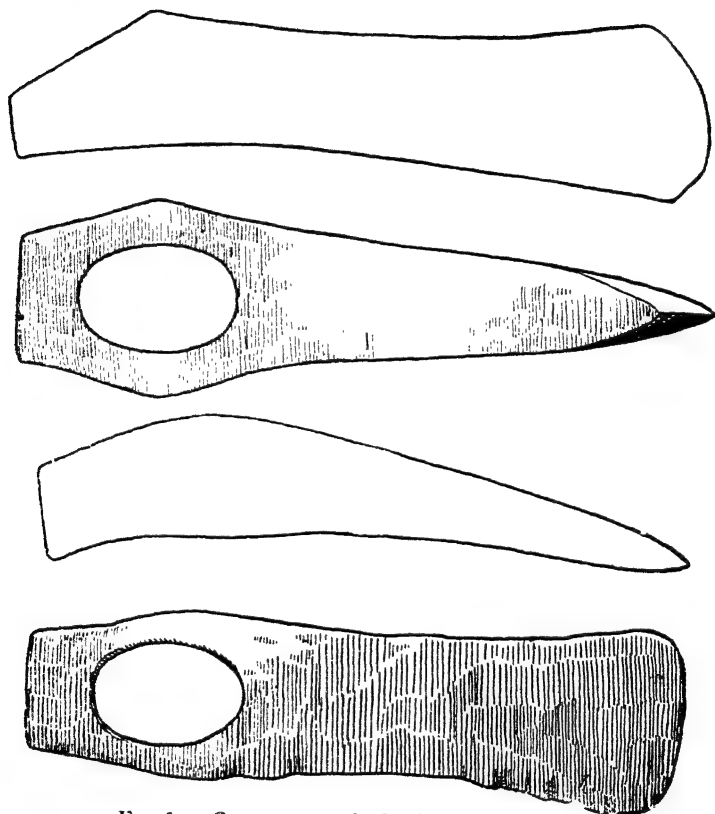


FIG. 62. Copper axe and adze from Gaborevo (3).

horizon and from several Bulgarian sites come clay stamps¹ imitating Asiatic seals though decorated always with spirals. By phase II, ring-pendants, as at Troy, Dimini, and Tordos, were being manufactured in bone and bone copies of double-spiral headed pins. Actual pins, like Fig. 27, 9, save that the spirals are ribbons, not wiry, were found in level III at Vidra,

¹ One from Çunesti, Moldavia, *Dacia*, V-VI, 1938. 117.

as at Ruse, Sultan and Gaborevo in Bulgaria. Finally even the Macedonian-Helladic askoi were copied locally in Vidra III and other Wallachian and Rumelian sites.¹

By this time metallurgists, attracted perhaps by the copper lodes of Eastern Bulgaria,² were actually working in Bulgaria

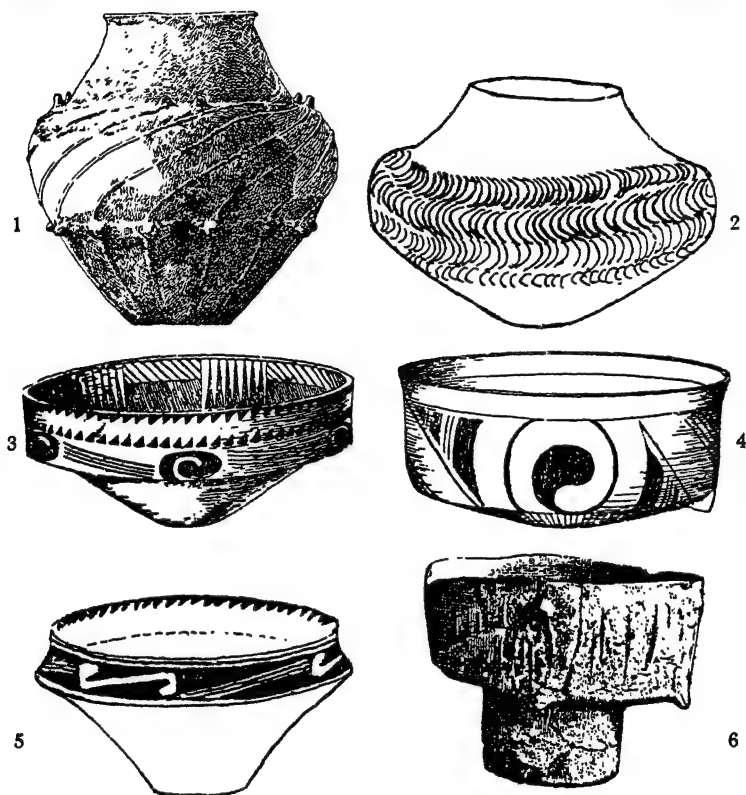


FIG. 63. Gumelnița pottery : 1, Czernavoda ($\frac{1}{8}$) ; 2, Tel Metchkur ($\frac{1}{8}$) ; 3-4, Tel Ratchev ($\frac{1}{8}$) ; 5-6, Kodja Derman ($\frac{1}{8}$, $\frac{1}{8}$).

and Wallachia. The double-spiral pins they made show the Anatolian models that inspired these artisans, but they seem to have relied on hammering, presumably through ignorance of casting,³ and not all their products were direct copies of

¹ BRGK., XXII, Taf. 7.

² O. Davis, *Man.*, XXXVI (1936), 119, describes prehistoric mines near Burgas; cf. Gaul, *AJA.*, LXVI, 400.

³ *PZ.*, XIX (1928), 131.

Asiatic forms. A shaft-hole axe and a shaft-hole adze were found together at Gaborevo (Fig. 62). Combined in a single casting, they would yield an axe-adze, and an actual specimen was found at Vidra. It may mark the starting point of the Hungarian series of period III.

Nevertheless, the Gumelnița economy was never transformed so that metal could take the place of stone. Throughout the period tools were normally made of stone or bone. But in addition to adzes of Boian style, flint axes were now used; the later specimens have splayed blades or polished faces in imitation of the rare copper axes. Hammer-axes and even

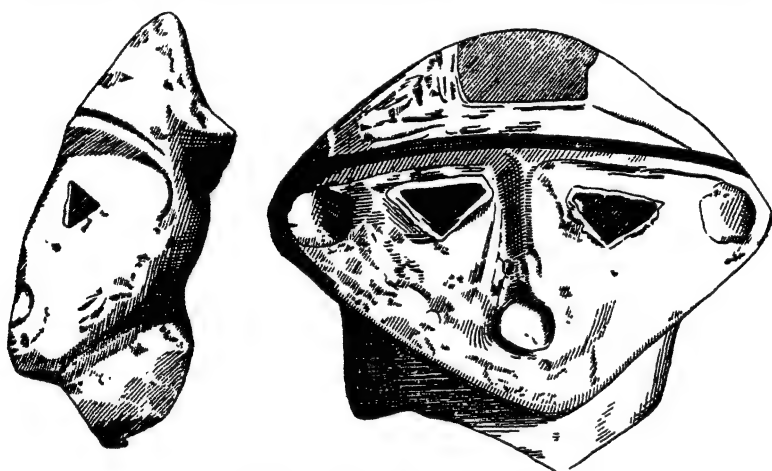


FIG. 64. Painted clay head, Vidra (7).

simple battle-axes, all hollow-bored as on the Middle Danube, came into fashion and antler-axes with square-cut shaft-holes. Arrows were tipped with double-ended bone points, more rarely with triangular flint heads. Even a bowman's wrist-guard was found at Vidra III. Spheroid mace-heads occur sporadically, but the culture never assumes a bellicose aspect.

The pottery carries on the old traditions. The peg-footed box went out of fashion and was replaced by the foot-base type (Fig. 63, 6), in which the foot is open to the body but closed below, and a socketed ladle of Danubian II type was introduced by phase I at Vidra. Excised decoration became less popular, but rusticated designs remained current, and graphite painting,

now positive, became the prevalent method of decoration. It was rarely supplemented by the use of white paint applied before firing. The impression of a split reed producing the so-called bracket ornament (Fig. 63, 2) was popular south of the Danube.

The relative stagnation in industry is counterbalanced or explained by an extravagant elaboration of magico-religious equipment. From phase I on, female figurines of clay were as carefully modelled as those from the middle strata at Vinča (Fig. 64). One from Vidra has shell inlays for the eyes, like Early Sumerian statuettes. A vase from Vidra III is a grotesque female figure 42 cm. high; a smaller vase from Gaborevo represents a male personage. Both products belong to the same circle of ideas as the anthropomorphic vase from Vinča.

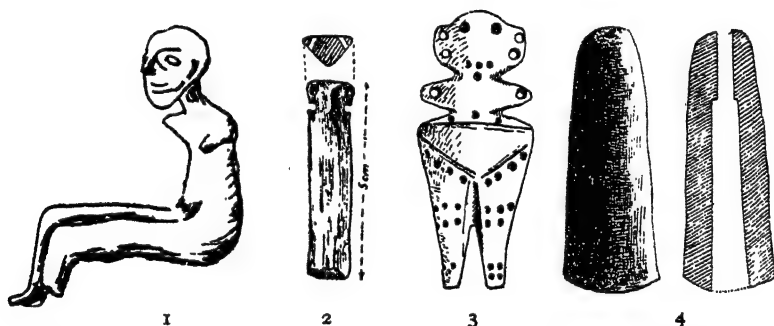


FIG. 65. Clay and bone figurines ($\frac{1}{2}$) and clay phallus ($\frac{1}{2}$). Bulgaria.

Sitting figures, male or female (Fig. 65, 1) were also made. Flat bone figurines are distinctive in all phases (Fig. 65, 3) (especially II), in Wallachia, and also in Bulgaria, where the form was also reproduced in gold leaf.¹ A much more conventional type is a simple bone prism (Fig. 65, 2); at Balbunar in Bulgaria prism figures were found in strata deeper than those containing flat figurines, but at Vidra the order of occurrence was reversed. Stone idols, rather like the Cycladic, were made of local Bulgarian marbles.² In addition to female personages males were being modelled in clay from phase II (as in Thessaly C-D), and clay phalli, like the Anatolian and Minoan, were used as fertility symbols (Fig. 65, 4). Other

¹ *Izv. Bulg. Arch. Inst.*, VIII (1934), 209.

² *Izv. Bulg. Arch. Inst.*, III (1925), 91-110.

ritual objects are horns of consecration (phase II), model altars and thrones, and by phase III models of houses (Fig. 66), as well as models of animals and doves, and stone sceptre-heads carved in animal forms.¹

The dead were not objects of any elaborate cult or even tendence. At the base of the tell of Balbunar twenty-two contracted skeletons (accompanied in two or three cases only by flint adzes) and two trunkless skulls had been buried under the house floors; four contracted burials more richly furnished were found at Ruse. But unburied skulls and ribs hacked about have been reported from other stations as evidences of cannibalism. The skulls from Roumania were dolichocranial and allegedly Mediterranean, but two from Ruse² are round.

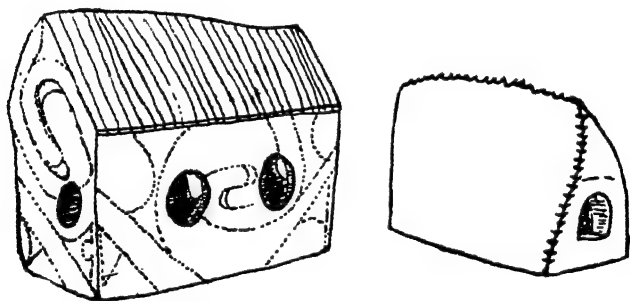


FIG. 66. Models of houses, Denev ($\frac{1}{12}$).

In addition to the pins already mentioned and bracelets of *Spondylus* shell, ring-pendants of bone or gold (Vidra II) and conventional bulls' heads of gold leaf adorned with punctuations (Vidra III) were worn as ornaments or charms.

Above the Gumelnița strata at Vidra and other Wallachian tells, the ruins contain relics of a new culture, Glina III. of a very different aspect. Economically hunting now became as important as farming, while warfare is indicated by numerous stone battle-axes and flint arrow-heads. The warriors' demand for metal weapons led smiths to settle in some settlements such as Glina, since crucibles and moulds for casting flat axes have been found. But their demands did not secure for Thrace regular supplies of tin; the region was incorporated neither in

¹ BRGK., XXII, Taf. 2.

² Izv. Bulg. Arch. Inst., II (1924), 187 f.

the Ægean nor in the Danubian commercial systems. Stone and bone remained the normal materials for tools; curved sandstone knives or sickles are a notable new type. The pots are coarse and decorated only with finger-tip impressions on applied cordons. And, as on the Danube in period III, the rise in importance of warriors coincides with a disappearance of female figurines and a decline of the associated cult.

In Bulgaria on the contrary an actual extension of Early Macedonian culture or its Anatolian parent into the Maritsa valley is attested by bowls with horned tubular lugs, jugs with cut-away necks, a goblet like Fig. 19, 5, and even anchor ornaments associated with the first remains of horses, from a tell (walled village) at Mikhalič near Svilingrad. But this advance is not demonstrably later than the Gumelnița culture and might be the source of its Anatolian traits. Similarly in Western Bulgaria and Oltenia the Salcuța culture is closely allied to that of Bubanj II though among the pots figure askoi as in Gumelnița III to which it seems parallel. But actually superimposed on Gumelnița remains at Sveti Kyrilovo in the Maritsa valley and Veselinovo on the Tundja comes another group of "Anatolian" wares found also at a few other tells in eastern Bulgaria. The plain burnished vases include "teapots" with spouts shorter than Fig. 9, and tankards with thumb-knob handles. Metal is represented by a shaft-hole axe, Troadic daggers and flat chisels. Horses bones are general. About 20 deposits in Thrace, some 4 m. deep, have yielded such Bronze Age remains, but apart from these no connected remains are known till the 8th century. In Wallachia there seems an almost equal gap after Glina III. Was occupation really interrupted? Or should we transfer to the Bronze Age the "Copper Age" cultures described above?

Relations with the Ægean and Anatolia are too indirect to provide valuable controls. A *terminus post quem* vaguely about 2500 B.C. for Gumelnița II-III is provided by the Trojan, Early Cycladic and Early Helladic double spiral-headed pins. The askoi from III would indicate a quasi-synchronism with the Early Macedonian Bronze Age and the corresponding phase C in Thessaly; the horns of consecration and phalli might bring even phase II into this horizon. On the other hand ring-pendants would synchronize Gumelnița II and Dimini. Vague though they be, the limits thus given for the Thracian Copper

Age would be quite incompatible with the high chronology suggested on p. 105 for Central Europe, if Gumelnița be synchronised with Danubian II, since 2500 B.C. would fall within the limits of period II! Even if Thrace be regarded as a back-water where cultural phases lag a period or so behind the Danubian, the short chronology on p. 331 becomes the more plausible. Indeed the shorter it be made, the less formidable the "Bronze Age hiatus" would appear.

The most important sites mentioned on the foregoing pages are described in the undermentioned publications:

Wallachia.	Vidra, Rosetti, in <i>Publicat. Muzeului Municip. Bucuresti</i> , I, 1934. Tangaru, Berciu, <i>Bul. Muz. judet. Vlasca T. Antonescu</i> , I, 1935. Boian, Christescu, <i>Dacia</i> , II, 1925, 249-380. Gumelnița, Dumetrescu, <i>Dacia</i> , II, 29-103.
Dobrudja.	Cernavoda, Schuchhardt, <i>PZ.</i> , XV (1924), 9 ff.; cf. <i>PZ.</i> , XX, 200 ff.
Oltenia	Salcuța, Berciu, <i>Arheologia preistorica a Olteniei</i> , Craiova, 1939.
Bulgaria	Gaul, <i>ASPRB</i> , XVI (1948) for all sites save: Mikhalič, <i>Razkopki i Proizhvaniya</i> (Narod. Arkh. Muz., Sofia, 1948), I, 8-20. Krivodol near Vratsa (Salcuța culture) <i>ibid.</i> , 26-57. Sveti Kyrilovo, <i>Jhb. d. d. Arch. Inst.</i> , LVIII (1943), "Arch. Anzeiger," 84-91. Veselinovo, <i>Izv. Bulg. Arkh. Inst.</i> , XIII (1939), 195-227.

OLTENIAN CULTURE

Just within the Carpathian girdle the löss lands of the Upper Alt basin became the centre of a rich culture which overflowed into the Upper Maros and into Moldavia. In the Alt basin itself¹ no less than twenty-five stations are known, but only one, Ariuşd (Erösd), has been at all fully explored. The village, protected by a fosse and a double palisade and bank, occupied a little plateau with an area of 5400 sq. metres ($1\frac{1}{2}$ acre), which accommodated at most twenty-one houses arranged in three rows. Only one row has been actually uncovered. The most conspicuous monuments are two layers of burnt clay showing impressions of branches; these presumably result

¹ Childe, *Danube*, 98-104; for pottery, *Dacia*, I, 1-27.

from the destruction by fire of two consecutive groups of houses. Those corresponding to the lower clay layer were rectangular gabled structures divided into two rooms on the megaron plan, but with hearths or ovens in the porch as well as in the main room. The finials were adorned with elaborate spiraliform mouldings of clay. A still earlier layer of huts may perhaps be inferred, but is known only from hearths, ovens, and pits in virgin löss.¹ The site would accordingly have been occupied during three architectural periods, each of considerable duration, but throughout traditions were preserved intact.

The villagers cultivated undetermined cereals, bred cattle, goats, sheep, and pigs, hunted deer, chamoix, boar, bear, and lynx, and fished with hook and line or single-barbed harpoons.

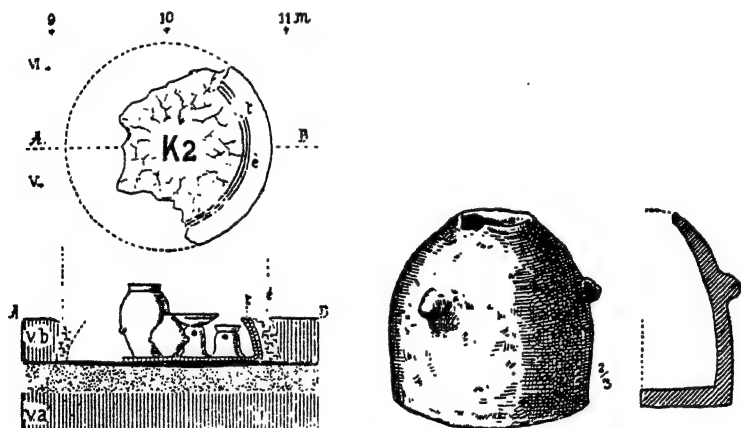


FIG. 67. Potters' oven and model, Ariusd (Erösd). After Laszlo.

Nothing indicates industrial specialization. Copper was indeed known, but it was used only for small and simple articles—awls, fish-hooks, bracelets, and rings. Still stone celts are rare; the adzes, though of shoe-last form, have a rectangular cross-section as if in imitation of copper models. They were never perforated, but might be mounted in antler sleeves as at Maglemose and Dimini, and perforated antler axes are common.

Magnificent vases were manufactured, but all are hand-made, and kilns are so numerous that they must belong to

¹ Cf. Schroll, *Die Stein- und Kupferzeit Siebenburgens* (a careless book, distorted by *a priori* theories).

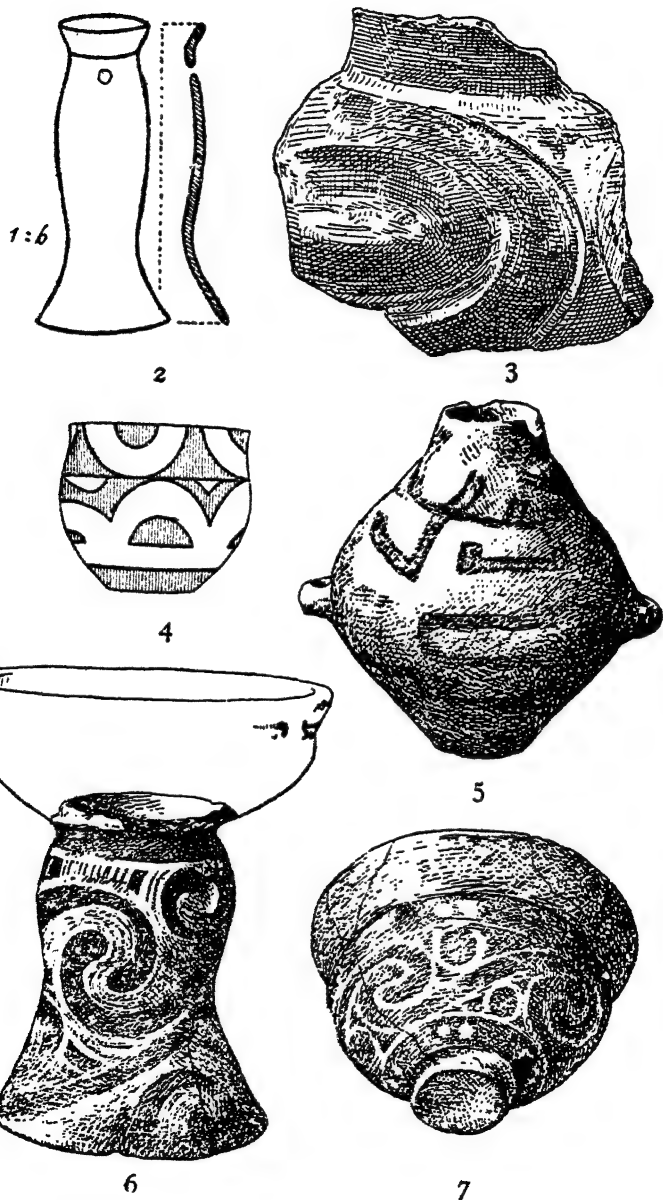


FIG. 68. Oltenian pottery. After Laszlo.

individual families rather than to a single professional. Fig. 67 shows the plan and base of an actual kiln uncovered at Ariuşd and a clay model of such a kiln. The pottery thus baked was generally reddish, sometimes blotched with black or parti-coloured as on the Morava. The forms include tubular supports like the Early Sumerian "stands" (Fig. 68, 2), pedestalled bowls (Fig. 68, 6), cups without handles and biconical or two-storeyed jars sometimes provided with lugs rather than handles (Fig. 68, 5) and ladles with very long handles. The designs, based on Danubian spirals and mæanders, may be executed in white on red or in red on a pale slip and are often outlined in black as in trichrome Dimini ware. But painting may be supplemented or replaced by fluting.

Spatulæ were made in bone precisely as in the Morava and Körös cultures.

Trade secured the Oltenian villages supplies of copper and even gold sufficient for small trinkets and occasional



FIG. 69. Clay stamp, Ariuşd ($\frac{1}{4}$).

obsidian flakes, but the materials can all be found in Transylvania. Clay stamps (seals) were only found in the lowest level at Ariuşd; in their spiral decoration they, like the Thracian, are farther removed from the Asiatic models than those of Thessaly and the Körös culture (Fig. 69). As ornaments, bracelets, rings, and beads of copper and gold, and necklaces of shell and limestone beads together with bored teeth of game were worn. Laminæ from boars' tusks, perforated at both ends, may have been worn as collars as in the Tel Halaf culture, or sewn on garments or even, as at Mycenæ, on helmets.

This rich material equipment was supplemented by a no less varied ritual paraphernalia—female figurines, generally steatopygous and modelled in two parts as in the Danubian II culture of Moravia (Fig. 70, 1), rarely decorated in the Cucuteni A style (like Fig. 70, 2), or seated, a few figures of men, many models of animals and a few zoomorphic vases. Conventional

stone carvings of animals, designed to be mounted on sceptres, are assigned to the Ariuşd culture as to the Gumelniţa culture of Wallachia.¹ They have been described as hippopotami and attributed to Egyptian influence. No graves of Oltenian vase-painters are known.

The position of Ariuşd in relation to other Danubian cultures has been much debated. A synchronism with the Körös culture of period I might be deduced from the bone spatulæ and clay stamps but that the latter would fit just as well in the Danubian II culture of the next period. At Marosvásárhely painted ware of Ariuşd style was certainly associated with vases incised in the style current at Bodrog-

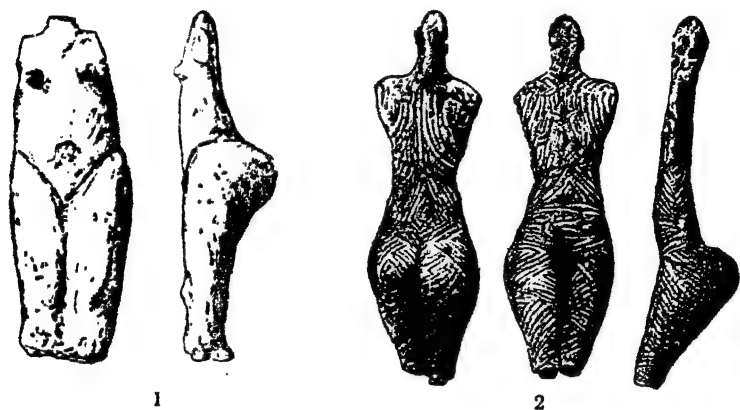


FIG. 70. Fingurines, Ariuşd and Cucuteni A.

keresztur so that the culture must have lasted into period III. It is inferentially later than the Boian A in the same region and probably equated with some phase of Gumelniţa by the stone sceptre-heads.

Above the levels containing painted vases at Ariuşd and some other sites are slender traces of settlements of warlike intruders, akin to the authors of the Glina III culture. The result in Oltenia is termed the Schneckenberg culture.² Its authors used crescentic stone knives, stone battle-axe (including the knobbed polygonal type), and hollow-based

¹ BRGK., XXII, 45; *Istros* (Bucuresti), II (1934), fasc. II.

² Childe, *Danube*, 129; Schroller, op. cit.

flint arrow-heads and relatively coarse pottery, incised, cordoned or cord-impressed. Though more pastoral than agricultural, they were rich enough or well-organized enough to afford copper flat axes, axe-adzes, and battle-axes, but not to dispense with stone and bone implements and arms. And they perpetuated some of their forerunners' traditions, making clay models of animals, but not of men, and using spiral motives in their ceramic art. The Schneckenberg culture, though formally chalcolithic, must in time coincide at least partially with period IV, the Early Bronze Age, which is otherwise unrepresented in the area. It was only during period V that a native bronze industry became established—and that so firmly that it persisted well into Hallstatt times when neighbouring areas were already using iron tools and weapons.

THE TRIPOLYE CULTURE

Ariuşd illustrates one early local facies of a culture spread widely in the basins of the Sereth, Pruth, Dniestr, Bug, and Dniepr where these rivers cut the tongue of löss-mantled, wooded plateau projecting eastward from the Carpathians into the Eurasiatic plain. Despite underlying uniformities in economy, equipment, and æsthetic principles, divergences in domestic architecture, ceramic decoration, and the balance between the several elements of the basic economy serve to define local groups and chronological phases. On the strength of a typological study of the ceramic decoration Passek¹ distinguishes five phases—O, I, II, III, and IV—of which I seems equivalent to Ariuşd while O is represented only by a couple of sites in Eastern Galicia between the Bug and Dniestr and perhaps Traian on the Bistriţa.² Her typology is confirmed by stratigraphical superpositions at only two sites—Cucuteni³ and Niezwiska⁴ where settlements containing pottery of phase I are overlaid by others yielding phase II wares. But it illustrates a gradual expansion from sites near the Carpathian range, occupied already in phases O and I, till in stage IV colonies

¹ *La Céramique tripolienne*, GAIMK., Moscow-Leningrad, 1935.

² *Dacia*, IX-X (1941-4), II ff.

³ H. Schmidt, *Cucuteni in der oberen Moldau, Rumänien*, Berlin, 1932.

⁴ *L.A.A.A.*, XVII (1930), 19-26; Kozłowski, *Budowle kultury ceramiki malowanej . . . w Koszylowcach, Niezwiskach i Buczaczu*, Lvov, 1932.

crossed the Dniepr into the forest zone near Kiev and, leaving the parklands for the steppes, reached the Black Sea coasts near Kherson.

The ruins of the actual dwellings form irregular rectangles of baked clay and the debris of ovens, generally lumped together under the common name *ploshchadki*, but really representing several different types of construction. Everywhere in phase I and in some regions later the baked clay represents merely fallen wattle and daub walls, as at Ariusd. But during phases II and III a new and more sophisticated type of house was developed in the basins of the Bug and Dniepr.¹ Here the clay floors had, it is said, been deliberately baked by fires kindled upon them so that the ovens, pots, and querns are found on the baked clay layers. Sometimes there are several superimposed layers, one of which may show on its under side the imprints of split timbers laid horizontally to support it. The multiplicity of the layers is said to be due to renewals of the floor, sometimes accompanying enlargements of the whole structure. The settlement at Kolomishchina¹ on the Dniepr consisted of two concentric rings (diameters 60-70 and 180 ms.) of 39 houses arranged radially with their entrances towards the centre. A minority of the houses were small, measuring 7 m. by 4 m. or less, and contained only a single oven, one quern and ten to fifteen vases. The larger houses, on the contrary, may measure as much as 22 m. by 5 m. or 17 m. by 8 m., be divided by partition walls, and contain four or five ovens, as many querns and thirty or more vases. Krichevskii argues that these have been formed by enlargements of the small house to accommodate additional families of a single great household. Side by side with such overground houses half subterranean dwellings² consisting of a porch and a long room containing a stove and clay benches along one side were also inhabited at some sites like Vladimirovka (II). In stage IV large multifamilial houses were no longer erected. A house of this stage at Buczac,³ sunk 1 m. into the löss and supported by upright posts, measured 4 m. square, a quarter of the area being occupied by a double oven built of stones.

¹ *Tripil's'ka Kul'tura*, Kiev, 1941; 15-25; *SA.*, VI, 20-45; *KS*, XII (1946), 14-22.

² *Real.*, XIII, 35; *TKU.*, 119-135.

³ Kozłowski, *Młodsza*, 142.

Clay models¹ found near Uman in the Bug basin give a good idea of the interior of a Tripolye house of the smaller class and correspond well with what Soviet excavators have recently found—the porch, the oven (actually built over a

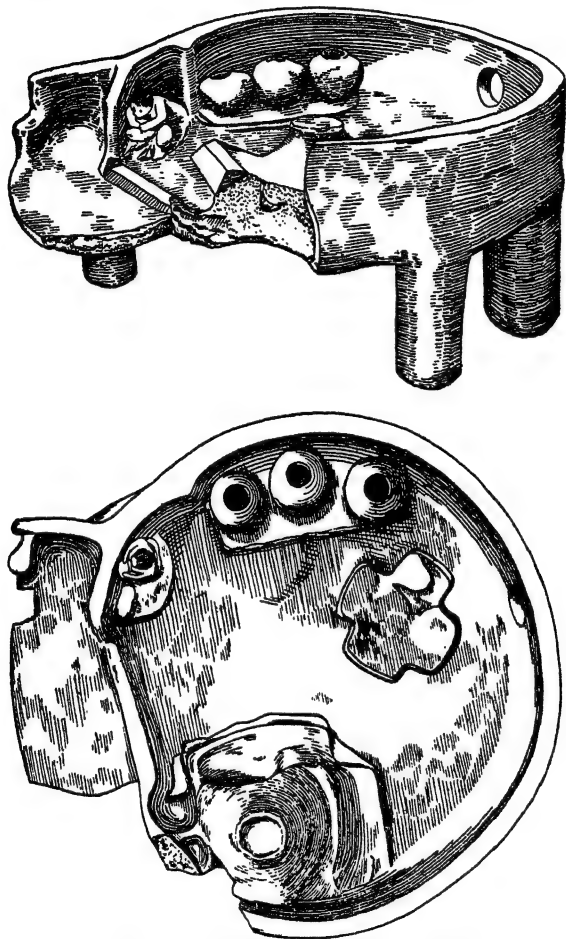


FIG. 71. Model hut from Popudnia.

frame of withies), the low cruciform pediment (concave on top), the jars of grain, and the saddle quern, but not the housewife pushing it. The Popudnia model, shown in Fig. 71, is 42.5 cm. long and 36 cm. wide. Some authors assume that because this

¹ Ibid., 141 and pl. XXX; *Swiatowit*, XIV, 151; XVI, 165; *TKU.*, 53.

and the Sushkovka model stand on legs, they represent dwellings raised on piles, but for this there is no excavational evidence. Another model from Sushkovka seems to represent one of the half-subterranean houses with central oven while one from Kolomishchina demonstrates a hip roof of thatch with a smoke vent at one end.

The Tripolye societies lived¹ by cultivating wheat (*T. vulgare*, *compactum*, and *monococcum*), barley, millet, and rye as well as some plant like fenil and breeding mainly cattle then also pigs and sheep or goats. In stage IV near Odessa sheep became more prominent and horse bones too were numerous; remains of horse have been found also on several earlier sites; at Darabani,² in Bessarabia, they are explicitly stated to belong to wild beasts, at Usatova to tame horses. Bones of camel have been reported from two sites; but their antiquity is dubious. An important supplement to farm produce was provided by game (elk, red deer, boar, beaver, and wild duck), fish, mussels (*Unio*), and acorns. But arrow-heads and fish-hooks are not common though clay net-sinkers are more numerous. In suitable regions settlements are densely concentrated—there are 26 villages of stages II and III in 110 sq. miles just south of Kiev³—but no site was continuously occupied during more than one ceramic stage so that the ruins never form tells. Presumably therefore the predatory system of cultivation obliged periodical shifts of the villages⁴ as among the Danubians. These moves would, however, seem to have been less frequent since the enlargement of the houses implies occupation for at least two generations.

The farmers were normally content with local materials for their equipment. Adzes or hoe-blades of soft-stone, and hollow-bored hammer axes of distinctly Danubian forms⁵ together with perforated adzes or picks of red deer antler were used at all periods. Axes appear first towards the end of stage III. Battle axes of stone and an imitation of one in antler appeared at Cucuteni in stage II but are nowhere common till IV. In fact warlike weapons hardly occur till that stage, though a knobbed mace-head (like those from Mariupol and from a

¹ TKU., 100 ff.; TK., 1941, 28 and 432; *Antropologiya*, Kiev, 1927, 2.

² *Dacia*, III–IV, 35.

³ *Tripil's'ka Kul'tura*, 1941, 13 (map).

⁴ Krichevskii, *KS.*, VIII, 53.

⁵ Kandyba in *Obzor Praehist.*, IX (1930–1), 32–56.

grave of Period III on the Maros) from Veremye (II) ¹ on the Middle Dniepr might be so regarded.

Still foreign materials were sometimes imported. Obsidian ² was used at Petreny in phase II, and copper occurs as early as phase O. It is represented at Izvoare in Moldavia ³ by a pin and small plaque, cold hammered, at Cucuteni in phase I by a flat celt and in phase II by an axe like Fig. 53, 5, a kite-shaped dagger with a mid-rib and rivets and armlets of poor bronze. Middle Dniepr sites of the same phase have yielded two adzes and a shaft-hole pick-axe together with open-hearth moulds for casting.⁴ Thereafter the supply seems diverted from the land routes, but a midrib dagger and an axe reached Usatova on the Black Sea coasts in phase IV and a flat adze comes from the contemporary site of Horodistea on the Pruth.⁵

The products of the Tripolye potters have long been celebrated. Everywhere they could build up out of well-leigated ferruginous clay vases of sophisticated form and often very considerable size, and fire them evenly by preference to an orange or brick-red colour. Actually some decline in technique is observable in phase III and IV, thick slips, for instance, being employed to mask irregularities of the surface. Throughout the period three decorative techniques were employed albeit in varying proportions—monochrome painting in black on the orange ground or on a light slip; polychromy in which black was combined with red on a white slip or with white on the red ground clay; and incisions so wide as almost to deserve the term channelling. A fourth technique, fluting, as at Ariuşd, was sparingly employed in phases O and I. Painted wares predominate over incised on the Middle Dniepr in phases II and III and to a lesser extent on the Bug, but judging from published finds the proportions were reversed in Bessarabia and Moldavia. Decoration in phase O took the form of spiral repetition patterns covering the vase surface all over which gave place already in I to closed S spirals. In the sequel these dissolve into circles, and the old all-over arrangement gives place to a tectonic composition, emphasizing the vessel's articulation. In all phases genuinely ceramic shapes were

¹ *Trudy XI Arch. S'ezda*, 778; *Antropologiya*, 1927, 25.

² *TKU.*, 106.

³ *ESA.*, XI (1937), 135 ff.

⁴ *Antropologiya*, 1927, 25.

⁵ *Dacia*, IX-X, 160.

produced including in stage I pedestalled bowls and hollow stands as at Ariuşd (Fig. 68) but also double stands, known as binocular vases. The latter are more distinctive of phases II and III (Fig. 72, row 3, 3, and 5, 4). Piriform jars with helmet-shaped lids (Fig. 72, row 5, 3, and 1) go back to phase 0 and persist into II when stumpy necked jars (row 1, 1) begin to



FIG- 72. Tripolye pottery.

appear. Craters, like the Northern funnel-necked beakers (row 3, 4), are not earlier than phase II while handles, (row 4, 2) are confined to III. Tripod and polypod bowls are found from phase II to IV.

From phase II onwards rough vases of porous clay, sometimes tempered with pounded shells and relatively badly fired, occur side by side with the standard red wares. Their surfaces are often striated by scratching with a comb, but animal heads may be modelled on the vase rim. Technically this fabric recalls those of Forest hunter-fishers, and it is most

abundant on the edge of the forest zone from Bukowina to the Middle Dniepr. Finally cord ornamented sherds occur already at Cucuteni in phase II, Horodistea on the Pruth,¹ and at sites like Gorodsk on the Teterev² and Usatova corded ware enormously preponderates over the true Tripolye fabrics.

In the light of the total excavation of Kolomishchina Tripolye society would seem to have been as democratic and

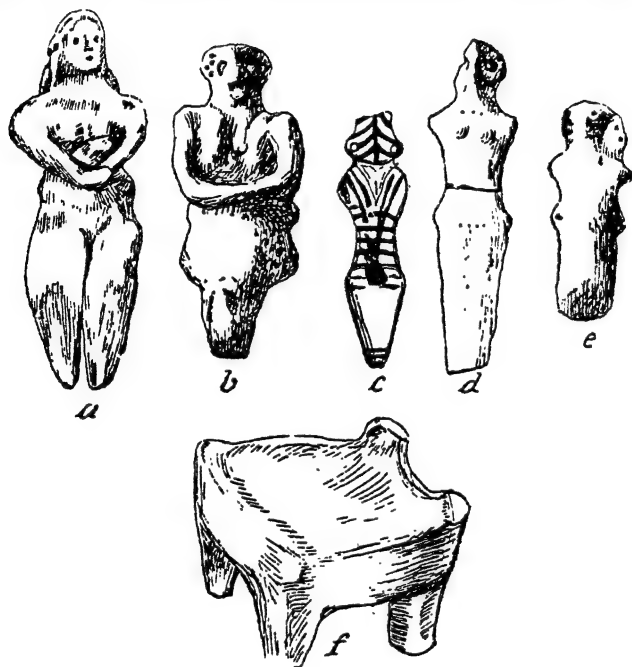


FIG. 73. Tripolye figurines and model stool.

equalitarian as the Danubians of Köln-Lindenthal since the size of the houses was determined by the number of families inhabiting them jointly. But at Feldeleseni, a Moldavian village of stage I, Nestor³ mentions that one house was more richly furnished than the rest and contained a stone animal sceptre-head as if it had belonged to a chief. Moreover the mace-head from Veremye might be interpreted as a symbol of authority.

¹ *Dacia*, IX-X (1941-4), 127-163.

² *Tripil's'ka Kul'tura*, 340-450.

³ *BRGK.*, XXII, 45 and 51, n. 80.

This practical equipment was accompanied by a no less elaborate paraphernalia for domestic cult. Figurines, generally female, were modelled at all periods though at first more rarely in the Ukraine than in Moldavia. In phase A these were steatopygous and covered all over with incised spirals (Fig. 70, 2). The idols of phase B are flatter, perforated for suspension, and depicted as wearing only necklaces (Fig. 73, *b* and *e*). Models of stools, animals (particularly bulls) and tauromorphic vases and perhaps also the hut-models may have served similar ritual ends. Clay stamp-seals (*pintaderas*) were in use as at Ariuşd during phase I.¹ No well defined burials attest any cult of the dead (the old theory that the *ploshchadki* are the ruins of "mortuary houses" is definitely discredited). But skulls and fragments of burnt human bones are said to have been collected in several dwellings particularly on the Middle Dniepr.²

By phase IV the classical Tripolye economy had dissolved, and the culture built thereon had been transformed into, or overlaid by, another in which only detached elements, such as rare painted vases, survive. At Usatova sheep have replaced kine as the commonest animal eaten, horses' bones are very numerous,³ the large houses with burnt clay floors have disappeared and weapons of war, like battle-axes, are conspicuous. Chieftains have arisen; they were buried under barrows⁴ sustained by a peristalith and covering also poor graves attributable to slaves. Cord-ornamented amphoræ from the barrows and from this and other settlements look like late versions of the Saxo-Thuringian (p. 167) while the tomb form itself accords with a version of Pontic burial that succeeded⁵ the Catacomb type (p. 157). At the same time in the Western Ukraine communities of swine-breeders who buried their dead in large stone cists with Globular Amphoræ (p. 189) took the place of the agricultural villages. How far these changes were due to the internal development of Tripolye societies and how far to invasions of pastoralists from the steppes and the forests can be discussed below. Still later Pontic barrows of the

¹ *Dacia*, III-IV, 65 (Ruginoasa, Baïci).

² Krichevskii in *Tripil's'ka Kul'tura*, 577.

³ *TKU.*, 104; *SA.*, V (1940), 258; cf. *Tripil's'ka Kul'tura*, 379 (Gorodsk).

⁴ *SA.*, V, 240-255.

⁵ If we accept Gorodtsov's interpretation of the sequence of interments in the Odessa kurgan; *Otchet Imp. Ross. Istor. Muzei v Moskve za 1915 g.*, 130-7.

Srubno stage were built on deserted village sites near Kiev¹ disturbing the baked clay floors of ruined houses. Similarly at Monteoru in Wallachia painted pottery of phase IV occurred in a Bronze Age village in strata anterior to Period V.²

These facts disclose the fate of the Tripolye culture and give a *terminus ante quem* for its whole development which should be completed by 1400 B.C. But the midrib dagger and bronze armlet from Cucuteni, phase II should not be earlier than Period IV, say 1600 B.C., if of Central European origin. On the same assumption phase I with its clay stamps (*pintaderas*) should be limited above by Danubian II. It certainly overlaps with Gumelnița on the Lower Danube. A more precise limit would be provided by sherds of grey Minyan, imported from the Ægean, stated by Schmidt³ to have been found at Cucuteni "between I and II" and by Nestor⁴ to occur in the "chieftain's house" at Feldeleseni, if the identification of the fabric were quite certain. Accepting it, stage I should not begin before 1900 B.C. On the other hand, it should not start much later if a couple of sherds from Ariușd have been correctly diagnosed as Early Helladic *Urfirnis*.⁵ In any case five centuries would give ample time for the developments here sketched since no stage demonstrably occupies more than two generations.

Fundamentally the culture here described is Danubian and should be due to a spread eastward of that culture as fertilized by Ægean influence in period II. But it may well have been quickened by fresh direct contacts with the Ægean in Moldavia and Oltenia, illustrated by the supposed Early Helladic and Minyan imports and occasioned by the trade in gold and copper from the Carpathian-Transylvanian ranges. Subsequently these contacts may have been cut off through the diversion of Ægean trade with Central Europe, on the one hand, to the Adriatic, on the other, perhaps, across Bulgaria to Black Sea ports south of the Danube.⁶

¹ *TKU.*, 47, 95; *Trudy XI Arch S'esda*, 677; cf. p. 157 below.

² Nestor, *BRGK.*, XXII, 49 and 95, correcting Schmidt, *Cucuteni*, 96.

³ *Jahr. d. d. Arch. Inst., Arch. Anzeiger*, 1923-4, 348.

⁴ *BRGK.*, XXII, 51, n. 80.

⁵ *Marburger Studien*, 1938, 31.

⁶ So Krichevskii, *KS.*, VIII (1940), 58.

CHAPTER IX

CULTURE TRANSMISSION OVER THE GREAT EUROPEAN

PLAIN

LAST century anthropologists regarded the Eurasiatic plain as a corridor through which Asiatic hordes, precursors of the Huns and Tatars, swept neolithic cultures to Western Europe. Their guess is hardly confirmed by the evidence of the spade; stock breeding is not attested earlier in the east than in the west. On the contrary, in the wide chilly zone of coniferous forest and even in the mixed forest south of it a palæolithic economy based on collecting, hunting, and fishing on the shores of meres, lakes, and gulfs and along the banks of great sluggish rivers with their myriad tributaries persisted long albeit made increasing sedentary by the emphasis on fishing. Even in the steppe zone of the south-east the same economy could and did survive in the river valleys and low-lying coastal belts. Innumerable little groups continued to form a loose continuum all over the plain as their ancestors had done since Boreal times (p. 9). While each community had time to develop its own peculiarities, irregular and infrequent intercourse between them is demonstrated by the widespread distribution of objects of Ural porphyry, Olonetz slate, East Prussian amber, Ural pine.

Only belatedly outside the western löss areas are neolithic cultures here revealed and that principally from graves. All these exhibit so many common traits that they may be conveniently treated together and designated by the single, if rather misleading, term Battle-axe cultures. But if we speak of their authors as "Battle-axe folk" that need not imply any ethnic unity save in so far as all emerge out of the same late mesolithic continuum. Concretely the Battle-axe cultures, like their precursors, fall into a series of more or less well-defined local groups. It will be convenient to distinguish (1) the Pontic steppe culture with a special facies in the Kuban and Terek valleys of Cis-Caucasia; (2) the Central Russian Fatyanovo culture on the Oka and Upper Volga; (3) the Separate Grave culture of Jutland with its precursor Virrings; (4) the Swedish-Finnish Boat-axe culture with forerunners; (5) Galician and

East Prussian Corded Ware cultures; (6) the Saxo-Thuringian or "classical" Corded Ware culture.

Everywhere the distinctive graves, usually covered (save in groups 2 and 4) by barrows, form small and rather dispersed cemeteries. Such, especially when several successive interments are covered by the same barrow, must betoken relatively sedentary communities. Remains of sheep and other domestic animals from graves or settlements of all groups and imprints of grains on the pots from most, justify the term neolithic.

The earliest graves normally contain a contracted skeleton (in contrast to the extended burials of the hunter-fishers). In South Russia the body was regularly covered with red ochre and the same colouring matter has been reported occasionally from graves in Central Russia,¹ Poland,² Moravia, Central and North Germany.³ Timber linings or coverings to the grave pit have been observed in South and Central⁴ Russia, Finland,⁵ Denmark⁶ and Central Germany.⁷ Grave-goods common to all groups include battle axes of antler, stone, or copper, a drinking vessel, that may be termed a Beaker (Fig. 77) and is everywhere sometimes ornamented with cord impressions, and necklaces of bored teeth of game. But the actual forms of these articles differ specifically from group to group.

Battle axes were sometimes buried with the departed in all groups but only in the North—Central Russia, Finland, Sweden, and Denmark—do they form a regular concomitant of every male interment. The weapons display wide local divergences in shape, only one form being represented sporadically in most groups⁸; this has a rounded body, expanding blade and knobbed butt like Fig. 76, 1. The rounded body and knobbed butt must be derived from the antler axe of mesolithic ancestry, but the expanding blade and a longitudinal groove or ridge (reproducing the seam of a casting) show that the stone axes really copy metal versions of the antler prototype.⁹ The beakers are neckless and ovoid in south-eastern Russia, but have a low neck on the Dniepr and a longer neck and flat

¹ *TGIM.*, XII, 1941, 135.

² *Bl.f.d.V.*, 9-10 (1933), 35-48.

³ *SM.*, XXXVIII-IX (1931-2), 1-15.

⁴ *Aarbøger*, 1944, 165.

⁵ *ESA.*, VIII (1933), 5-20; Forssander, *Bootaxtkultur*, 56; Brøndsted, *Danmarks*, I, 222.

⁶ Childe, *ESA.*, IX, 158.

⁷ *JST.*, XXIV (1936), 71.

⁸ *TGIM.*, XII, 122.

⁹ *PZ.*, I, 18.

bases further west, while in Central Russia and Sweden shallower globular forms were preferred. Save on the Volga and Manych cord ornament was universally used, but always in competition with other decorative techniques and without uniformity of design.

Still the archæological agreements underlying local divergences do suggest at least that all groups had crystallized out under one common impulse. So it would be reasonable to infer that each group owes also the elements that make it neolithic—its stock and cereals—to the same source. Now within the whole province there is only one area where wild sheep¹ may have been available for domestication and perhaps also wild grasses to cultivate as *Einkorn* and millet. This is the Pontic steppe, and it was exposed to influences from the Orient across the Caucasus and over the Black Sea while Caucasian ores might offer a bait to prospectors from Mesopotamia or Anatolia.

PONTIC CULTURES

In the Pontic zone a mesolithic population has been well documented by the Azilian-Tardenoisian relics from Crimean and Caucasian caves (p. 6) and microliths from dune settlements. At least in the Crimea pots with pointed bases like those of Fig. 7, 1, or Fig. 123, 3, were associated with the microliths in the upper Tardenoisian layers.² Perhaps the same gathering economy is disclosed by remarkable collective burials at Mariupol on the Sea of Azov and Nalchik in Central Cis-Caucasia, since in neither case was stockbreeding or agriculture positively attested.

At Mariupol³ 120 adults and 6 children had been buried in groups extended across one long trench filled with red earth. At Nalchik⁴ a low irregular mound covered 130 contracted skeletons, again buried in groups and covered with red pigment. Such numbers exceed those recorded from any European

¹ Gromova, *Doklady*, Akad. Nauk. U.S.S.R., A., 1935, IV, No. 12, pp. 105-6.

² *SA.*, V (1940), 97, 299.

³ Makarenko, *Mariupolski Mogilnik*, Vse-Ukrainska Akad. Nauk., Kiev, 1933.

⁴ Hančar, 222; *Mi IAR.*, III (1940). The whole edition was destroyed by a Nazi bomb.

cemetery of food-gatherers so that the denial of neolithic status may be unjustified. Actually flint celts with polished blades were found at Mariupol together with stone beads and bracelets and a variety of ornaments carved out of wild beasts' teeth and boars' tusks. Two skeletons were accompanied by knobbed mace-heads, interpreted as emblems of chieftainship. A female figurine of stone lay in one grave at Nalchik, and pottery in others. However these communities got their food, they were not economically isolated. A pendant of porphyry imported from the Urals occurred at Mariupol; a copper lock-ring and beads of vitreous paste and carnelian at Nalchik. The last named ornaments are explicitly results of connection with Oriental civilization and even the knobbed maces from Mariupol may be thus interpreted since the type was common in Mesopotamia from Early Dynastic times.

Oriental influence is still more patently attested in nine or ten huge barrows that constitute the Early Kuban culture of Schmidt¹ and Yessen.² These remarkable tombs may well illustrate the conversion of autochthonous food-gatherers to food-production by agents of Oriental civilization seeking in this metalliferous region copper, gold, and silver to satisfy the demand of Mesopotamian cities. Their extravagantly rich furniture, consisting largely of actual oriental imports (no moulds have been found in the area to show that even the copper implements were manufactured locally³), would imply that wealth, gained through control of lodes and the access, thereto, was intercepted by, and concentrated in the hands of, chiefs who could thus obtain metal gear while the rest of the population may have had to make do with stone. The "Early Kuban" tombs may then be as old as the cemeteries of Nalchik and Mariupol.

But the group's position at the head of the Pontic series rests on typological rather than stratigraphical evidence and has been questioned by Degen-Kovalevskii.⁴ He would relegate the whole group to the end of the pre-Scythian metal age, but largely on sociological grounds. In fact the emergence of chieftains or divine kings is a not infrequent by-product of the

¹ *ESA.*, V, 9-19.

² "Iz Istorii drevnei Metallurgii Kavkaza," *IGAIMK.*, 120 (1935).

³ Yessen, 90.

⁴ *KS.*, II (1930). 14-17.

impact of higher civilization on barbarian tribes such as the barrows concretely attest. We may accordingly describe the Early Kuban group at this point while admitting that the epithet "Early" is not yet stratigraphically justified.

Supposedly the earliest of these burials was found under a

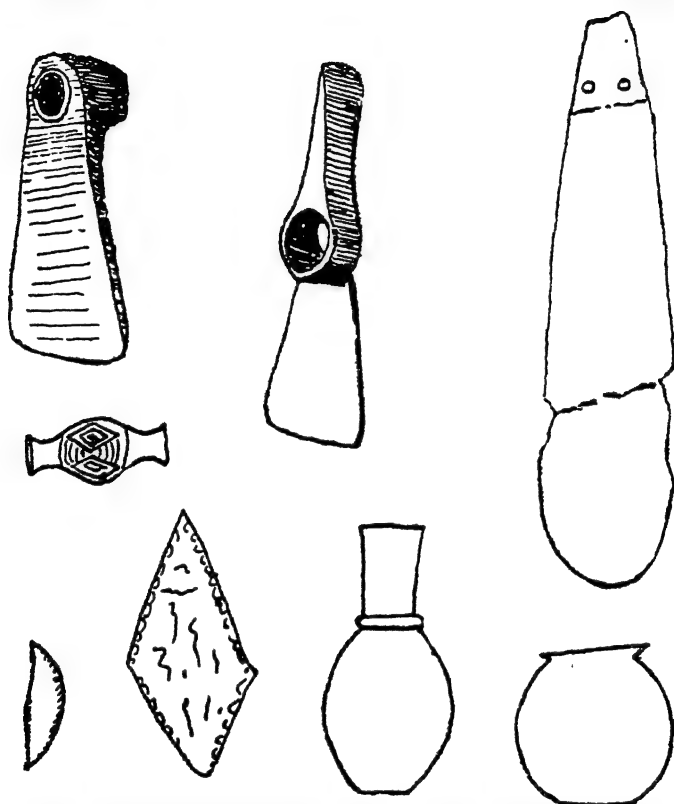


FIG. 74. Transverse axe, axe-adze, knife, and gold and silver vases (†), carnelian bead and flint arrow-heads (†), from Maikop tomb.

barrow near Maikop.¹ The tomb was a tripartite wooden chamber in a deep shaft encircled by a ring of boulders. A prince had been buried in the main chamber under a canopy adorned with gold and silver lions and bulls. A male and a female corpse occupied the remaining compartments, less richly furnished, but all the bodies were covered with red ochre. The royal weapons (Fig. 74) include a transverse axe, certainly, and a

¹ Hančar, 248.

straight axe probably, imported from Mesopotamia together with an axe-adze that looks like a combination of the two Mesopotamian forms,¹ but also lunate and rhomboid arrow-heads of flint. A gold flask with a silver ring round the neck, squat jars of reduced grey ware and a few beads of turquoise and lapis lazuli² suggest contact with Iran. Meerschaum³ had been imported from Anatolia. Two silver vases³ are engraved with local mountain scenes and a procession of animals, two kinds of ox, a mouflon, a tame boar, Przewalski's horse, a panther.

Perhaps rather later are two tombs under barrows at Novosvobodnaya (generally but incorrectly termed Tsarevskaya).⁴ Both were megalithic cists divided into two compartments by porthole slabs (Fig. 78, 1). Cist II measured internally 1.80 m. + 1.15 m. by 1.60 m. by 1.20 m., and was surrounded by a ring of orthostats over a metre high. The princely dead, one wearing a linen garment, dyed red and purple, a cloak of camel's wool covered with a black hide and profusely sprinkled with red ochre, were provided with shaft-hole axes, bidents, spearheads, cauldrons, ladles, wands, and gouges of copper, together with flint arrow-heads and globular clay vases (Fig. 75). The spearhead is directly derived from an Early Sumerian type⁵ and the bident and gouge have an equally Early Sumerian pedigree, but exact parallels to them and to the ladles, perhaps also to the wand, can be cited from Hissar III⁶ in Northern Iran. The pottery, on the contrary, undoubtedly resembles the Central Russian Fatyanovo ware and the Globular Amphoræ of Central Europe (pp. 158, 189).

Other tombs, contemporary with Novosvobodnaya, could be used to illustrate further the Oriental influence on the Kuban region, but one at Vozdvizhenskaya,⁷ which may be somewhat later, contained a copper battle-axe (Fig. 76).

The remaining Cis-Caucasian barrows—Hančar's Kuban-Terek stage—can be fitted into a Pontic culture sequence securely based on the succession of interments in barrows covering several burials as established by Gorodtsov's classical

¹ *LAAA.*, XXIII (1936) 114-15.

² Yessen, *op. cit.*, 81.

³ Hančar, 296.

⁴ Hančar, 244.

⁵ *LAAA.*, XXIII (1936), 114-15.

⁶ *Mus. J.*, XXIII (1933), pls. CXIX, CXX.

⁷ Hančar, 253.

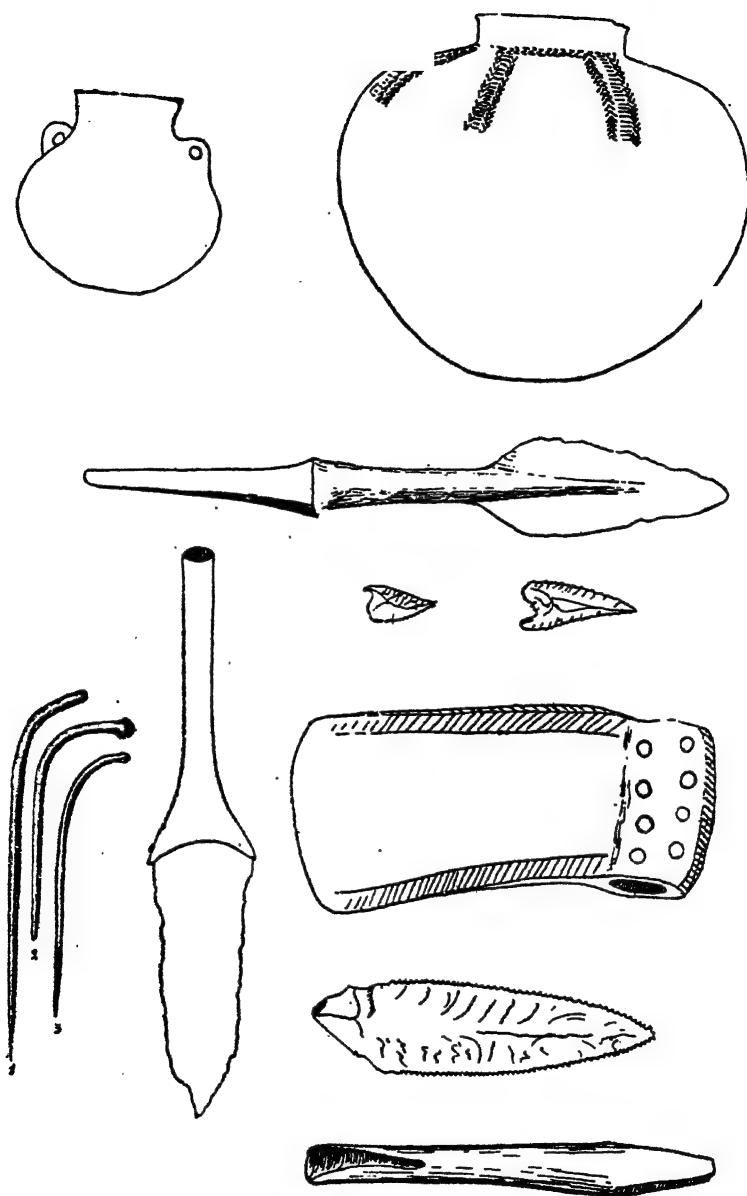


FIG. 75. Pottery (1), weapons and tools (2), and pins (3) from tomb at Novosvobodnaya.

excavations in the Donetz basin ¹ and confirmed and amplified by Soviet archæologists for the Manych ² and the Lower Volga.³

The earliest—*yamno*—graves under all barrows are shafts or pits (*yamy*), roofed, and perhaps lined, with timbers, and each containing a contracted ⁴ skeleton covered with red ochre and laid upon a bier, sometimes in a tent-shaped mortuary house of poles.⁵ The distinctive grave goods are ovoid beakers (Fig. 77, 3-4) and hammer-headed pins of bone or copper. (Fig. 76, 5-6). No indications of agriculture have been detected in the graves, and in only three tombs did sheep bones indicate pastoralism. On the other hand acorns and the teeth of game animals as well as hollow-based flint arrow-heads and bone harpoons do illustrate gathering activities. Hence Kruglov and Podga'etskii ⁶ infer that the *yamno* culture was based mainly on hunting and fishing. But the rarity of remains of domestic stock can be explained on the assumption that flocks and herds, representing capital, were still collectively, not individually, owned. In any case they made pots—ovoid beakers 15-18 cm. high, similar in form to those of the Forest hunter-fishers, but decorated, west of the Volga, with cord impressions round the neck as well as with pits, comb-stamps, or rarely maggots.

The scanty furniture of the steppe graves still looks neolithic, but round the Caucasus a native school of metallurgy, exploiting local ores, had already arisen. The Kuban-Terek graves no longer contain Oriental imports,⁷ but copies of Oriental types, locally cast—hammer pins as in Anatolia and disc pendants on which filigree work may be ingeniously imitated by *cire perdue* casting, narrow flat chisels,⁸ a shaft-hole axe with ridges on the butt ⁹ as well as flat tanged daggers and exceptional round-heeled riveted daggers.¹⁰ These products

¹ "Rezultaty arkheol. Issledovannii v Iziurnskom uезде 1901 g." *Trudy XII arkheol. S'ezda*, Vol. I, and "Rezultaty arkheol. Issledovannii v Bakhmutskom uезде 1903 g." *Trudy XIII arkheol. S'ezda*, Vol. I.

² *SA.*, IV (1937), 93.

³ Rau, *Hochergräber der Wolgasteppe*, Marxstadt, 1928.

⁴ Extended burials are exceptional, *Trudy XIII arkheol. S'ezda*, I, 216.

⁵ *IGAIMK.*, 100 (1933), 105; *Trudy VIII arkheol. S'ezda*, III, 89.

⁶ "Rodovoe Obshchestvo Stepei vostochnoi Evropy," *IGAIMK.*, 119.

⁷ *IGAIMK.*, 120, 94.

⁸ *ESA.*, IV, 16.

⁹ *IGAIMK.*, 110, II, 224, fig. 128, 9; parallels: Assur, about 2000, B.C., *PZ.*, XXVII, 104, fig. 4; or about 1,500 B.C. Contenau and Ghirshman, *Fouilles de Giyan*, pl. 22.

¹⁰ *ESA.*, IV, 35.

seldom reached the steppes where the hammer pins were copied in bone. Only a few lockrings, some flat-tanged daggers from the Dniepr basin and perhaps a couple of thin broad flat axes from the Lower Volga reflect rudimentary trade. Even from the Kuban we have stone battle axes of the Pyatigorsk type.¹ A stone figurine from a *yamno* grave at Ul'ski aul, Kuban,

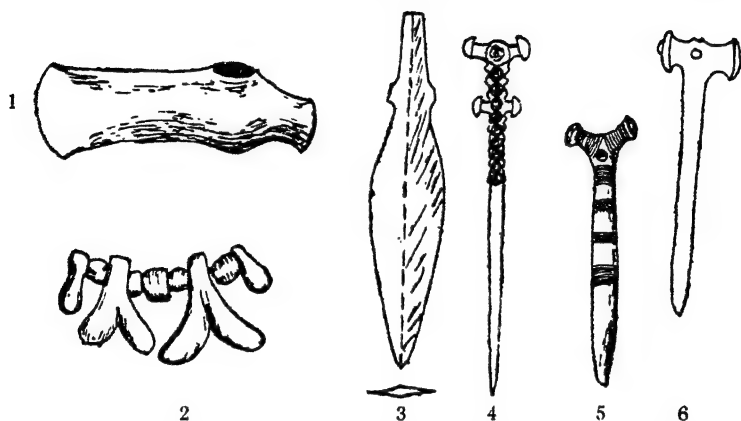


FIG. 76. Copper battle-axe, Vozdvizhenskaya (1/3), copper beads (2/3), copper spearhead (1/3), copper and bone hammer-pins (1/3).

(Fig. 8, 11b) might be regarded as a reflex of Ægean influence, but for analogues in Mesopotamia and Iran.

The earliest secondary graves to be dug into the barrows explored by Gorodtsov on the Donetz and by Artamonov on the Manych are termed *catacombs*—really pit-caves as in the Ægean but usually containing only a single corpse and never more than six or seven. Such graves occur also on the upper Kuban, the lower Dniepr and round the Black Sea coasts to Odessa but are exceptional on the Lower Volga and unknown on the Middle Dniepr round Kiev. Here the old pit was still the rule and everywhere it co-existed with catacombs. Hence the second stage of Pontic culture is more reliably defined by pottery than by grave type. The characteristic catacomb vases of the Donetz are flat-bottomed bulging vessels ornamented with the impressions of cords, whipped or braided cords, comb stamps or shells that may form spiral patterns (Fig. 77, 1).

¹ *ESA.*, VIII, 129.

They are clearly allied to the flat-bottomed vases from shaft-graves of Rau's¹ "Poltavka stage" which occupy the appropriate position in the barrows of the Lower Volga. On the Manych² "cross-footed lamps" (saucers on quatrefoil feet, divided into two unequal compartments by a curved septum) adorned in the same style, occur in the catacombs and are found also in the Kuban-Terek province,³ but recall Körös, Baden and Vučedol forms as does the tomb type itself (p. 292).

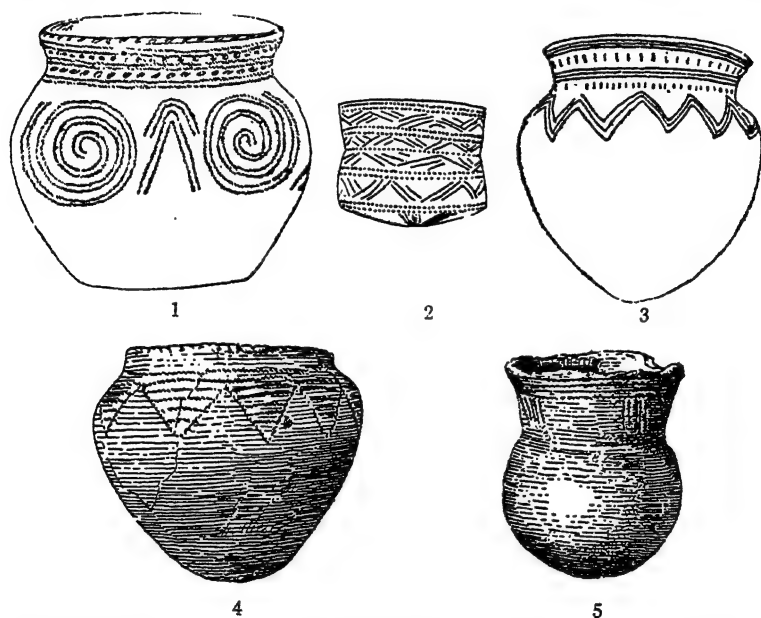


FIG. 77. Vases : 1, from catacomb grave, Donetsk ($\frac{1}{4}$); 2-3, from pit-graves, Yatskovice, near Kiev ($\frac{1}{4}$); 4, from *yamno* grave, Donetsk basin ($\frac{1}{4}$); 5, of Virrings type from Denmark ($\frac{1}{4}$).

Farming was now the basis of life, not only in the Kuban and Terek basins, but also in the valleys of the Don, Donetsk, and other Pontic rivers. Millet and perhaps other cereals were cultivated; flint sickle-teeth, saddle-querns, pestles and mortars were deposited in the catacomb graves. Even in the steppe graves bones of domestic animals are abundant—principally of sheep, but also of cattle, pigs, and even horses.⁴

¹ *Hockergräber*, 18, 43-8.

² *SA.*, I, 118; IV, 104.

³ Hančar, 277-280, gives a list.

⁴ Hančar, 269, 386 ff.; *IGAIMK.*, 119, 92 ff.

The deposition of domestic animals in the graves need not denote the beginnings of stock-breeding so much as a change from collective to individual ownership of herds and flocks.

Metal was now more common even on the steppes and was used for tools as well as weapons and ornaments. Narrow flat chisels had been employed in excavating the Donetsk catacombs, and a type with folded socket is represented in a hoard from Privalnoe¹ on the Kuban that contained a catacomb dagger. Hooked metal sickles from another hoard at Kostromskaya may belong to the next phase. The daggers are still flat and rivetless, but the tang expands towards the pommel.² Shaft-hole axes from the Privalnoe hoard or stray have already the

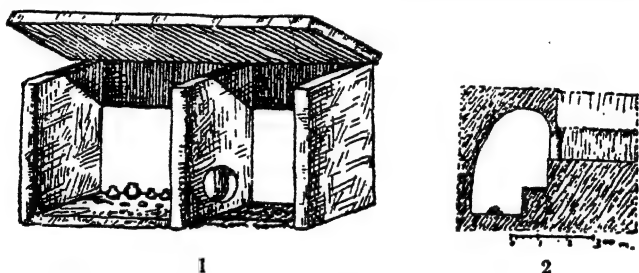


FIG. 78. 1, Megalithic Cist, Novosvobodnaya; 2, Catacomb Grave, Donetsk basin.

drooping shaft-hole and long narrow body that characterize East European axes till the end of the "Copper Age". Additions to the warriors' armament distinctive of the catacomb phase are heeled battle-axes³ of stone, like Fig. 41, 1, arrow-shaft straighteners⁴ like Fig. 109, 3; pear-shaped mace-heads and sling bullets.

The freer use of metal on the steppes may be a result of the exploitation of local ores round Bakhmut. At the same time the occurrence of hoards in the Kuban valley might indicate organization of the Caucasian metal-industry for export. Intensified trade is reflected in the Donetsk catacombs by imported beads of fayence and chalcedony and local imitations of winged beads (Fig. 76, 2). Cranial deformation, observed on skulls from the Manych catacombs⁵ may reflect Ægean

¹ *IGAIMK.*, 120, p. 99.

² e.g., Rau, *Hochergräber*, pl. III, 3.

³ *ESA.*, VIII, 61.

⁴ *ESA.*, II, 18; IV, 25.

⁵ *SA.*, IV, 122; *KS.*, VIII, 86.

influence since the practice goes back at least to the fifteenth century there.¹

It is still more plausible to regard the distinctive grave type as inspired by the Ægean pit-cave. The "dolmens" ² built on the foothills overlooking the Kuban and the Black Sea coasts might then be regarded as substitutes for catacombs where rocky subsoil prevented excavation. They are really trapezoid cists, 1.8 to 2.5 m. long and 1.6 to 2.3 m. wide, entered through a porthole slab and containing four to twenty corpses. The structural similarity of these chambers to the imposing tombs of Novosvodobnaya would on that hypothesis strengthen the case for lowering the relative date of these "Early Kuban" burials, especially as the metal ware from one "dolmen" at Esery ³ would seem more appropriate to the *sрубno* than the catacomb phase.

The next phase in the Pontic funerary record was termed *sрубno* by Gorodtsev from the neatly mortised coffins (*sruby*) that characterized many graves dug into the Donetsk barrows after the catacombs. But, as before, the phase is best defined by pottery—carinated vases decorated with meandroid or other rectilinear patterns executed with the comb-stamp or simply incised. Otherwise save in the Khvalinsk group of the Lower Volga ⁴ the graves were more poorly furnished than before—a phenomenon common to the whole of Europe in the Late Bronze Age. The funerary record is, however, now supplemented by relics from permanent agricultural settlements ⁵ and by hoards. The metal types show conclusively that we have now reached the Late Copper Age; for, though still made of unalloyed copper ⁶ and therefore often archaic looking, they include socketed celts of Seima type or two eared,⁷ axes with drooping shaft-hole (the clay mould for one lay in a grave at Kievka, Voronezh⁸), midrib daggers with notches instead of rivet-holes, spearheads with sockets formed by folding or cast and fitted with a lateral loop and numerous hooked sickles. In reality the "Copper Age" barrows of South Russia cover

¹ Dingwall, *Artificial Cranial Deformation*, 32 and 226.

² *ESA.*, IX, 2-19, with map.

³ *ESA.*, VII, 98, 103.

⁴ Rykov, *ESA.*, I, 52-80; *SGAIMK.*, 1931, No. 8, 31-3.

⁵ *TSA.*, IV, 132; *IGAIMK.*, 119, 120-4; *KS.*, II, 17.

⁶ *IGAIMK.*, 110, II, 242.

⁷ *IGAIMK.*, 120, 137; *TSA.*, II (1928), 56; *ESA.*, II, fig. 96.

⁸ *ESA.*, II, 73.

as long a span of archæological time as the Bronze Age barrows of Britain.

Very few published graves in the Kuban-Terek region can be assigned to the *sрубno* phase. This circumstance enhances the plausibility of Degen-Kovalevskii's proposal to transfer the "Early Kuban" group towards the end of the record, but might be explained by the notorious contempt of Tsarist excavators for graves furnished only with pottery as Late Copper Age graves normally were.

The absolute chronology of the Pontic stages should be easily deducible from the Oriental types found particularly in the Kuban barrows. In practice they are not so helpful. All the Early Kuban types can indeed be paralleled in the Royal Tombs of Ur which thus give a *terminus post quem* about 2500 B.C. for that phase. But the longevity of the types was such that a date as late as 1500 would be perfectly in order. Indeed the graves of Hissar III, so dated by the excavator but more recently put about 2000 B.C.,¹ afford almost better parallels to Novosvobodnaya than do the earlier graves of Ur. For the *yamno* phase metal hammer pins occur in the royal tombs of Alaca Höyük and in graves at Ahlatlibel in Central Anatolia, but these interments can only be vaguely dated as "probably before 1950 B.C." On the other hand a *terminus ante quem* for the catacomb phase is perhaps provided by the heeled battle-axe from the Early Macedonian of Hagios Mamas (p. 83). Admitting that this specialized type reached Macedonia from the Pontic region but taking a minimal dating for the end of Early Macedonian, the catacomb phase should have begun well before 1700 B.C.

THE FATYANOV CULTURE

In the forest zone of Central Russia the first reliable indications of the new neolithic economy are afforded by the bones of domestic cattle, swine, sheep, goats, and horses² and at least one grain-rubber³ from graves of the Fatyano group³ in the basins of the Oka and the Upper Volga. The graves, normally containing one contracted skeleton, rarely

¹ *Antiquity*, XVII (1943), 181.

² Tretyakov, *IGAIMK.*, 106, 126-8; *SA.*, II, 32.

³ *KS.*, XVI (1947), 22-32; *SMYA.*, XXXII, No. 2; *FM.*, 1924, 1 ff.

a male and female together, occasionally cremations,¹ form cemeteries of half a dozen to a score, and occur both in the low-lying basins, long occupied by the hunter-fishers, and also on the uplands right to the Volga-Oka watershed, where the gatherers had never settled. This extension is itself a symbol of the new economy since the uplands are better suited to tillage and grazing than the chilly vales,² but it was possible only with aid of the polished flint celts that occur alike in men's and women's graves,³ since the new territory was densely wooded. At the same time bones of pike and teeth of bear, wolf, fox, lynx, and reindeer, as well as shells, used for ornaments, attest a persistence of the old economy of the Forest.

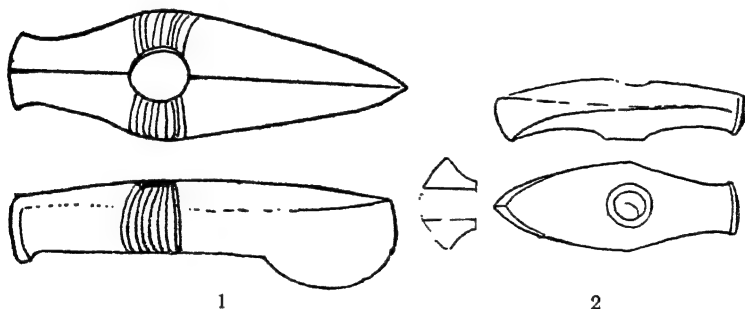


FIG. 79. Fatyanovo battle-axe and Finnish boat-axe ($\frac{1}{2}$).

But now cattle-raiding provided a prize for more serious warfare than the hunter-fishers had indulged in, and so the graves are furnished with an armoury of weapons strange to the older forest dwelling-places. Stone battle-axes accompany every male interment. The finest have the form of Fig. 79, 1; most of the rest could be treated as degenerations of these.⁴ But one, from the cemetery of Trusovo in the Oka basin was of the heeled type⁵ appropriate to the catacomb phase of the steppes. Another grave in the same cemetery contained a pair of arrow shaft-straighteners, belonging to the same Pontic context. In a few rich graves on the Upper Volga shaft-hole axes of copper⁶ took the place of stone ones or even accompanied such. Flint strike-a-lights with tinder⁷ were sometimes buried with the

¹ *PGAIMK.*, 1934, No. 11-12 (Vinogradov).

² *SA.*, II, 33-5.

³ *TGIM.*, XII (1941), 111.

⁴ As by Ayrapää, *ESA.*, VIII, 16-23.

⁵ *SA.*, IV, 302.

⁶ *TGIM.*, VIII (1938), 66; XII, 125.

⁷ *TGIM.*, XII, 132.

dead. Perforated clay discs, some 5.5 cm. in diameter,¹ are surprisingly like the model wheels common in Mesopotamia from 3000 B.C.

The numerous pots are globular, often provided with flattened bases and/or distinct necks, but never with handles. Vases from early cemeteries in the Oka basin may be decorated with cord impressions round the neck²; more generally but perhaps later, the patterns were executed with a comb or other stamp and often arranged in panels on the shoulder (Fig. 80).

Peaceable, if irregular, commerce procured for the Fatyanovo warriors occasional beads of amber,³ silver earrings, and copper disc pendants, rings, armlets, and neck rings.

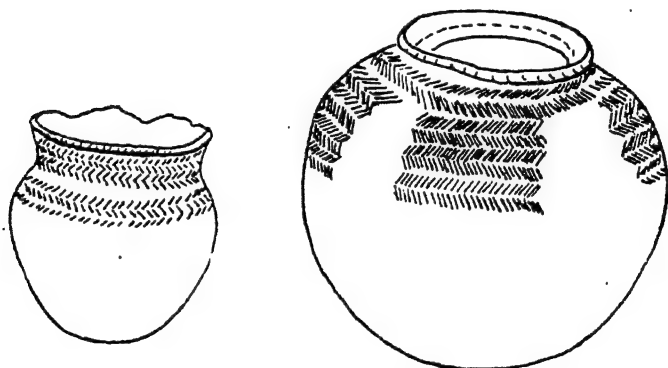


FIG 80. Fatyanovo pottery (†).

It is now evident that the Fatyanovo cemeteries mark no single brief episode, but must be dissolved into regional and chronological groups. The requisite classification has yet to be worked out. One clue to the relative position of Fatyanovo in the general cultural sequence is provided by the catacomb types from Trusovo that give for this cemetery in the Oka basin a quasi-synchronism with that phase of Pontic culture. The Upper Volga cemeteries may begin later. The copper axes from them stand very close to those from Seima and Galich (Figs. 81, 4, and 103, 4). These hoards themselves presumably represent southern imports received or intercepted by the

¹ *SA.*, VI, 79.

² *TGIM.*, VIII, 70.

³ *ESA.*, X, 185.

Fatyanovo population. But both hoards¹ contain Late Copper Age types not earlier than the Srubno-Khvalynsk phase of the Pontic sequence with which some Fatyanovo graves are demonstrably contemporary.

The contrast of the Fatyanovo culture to that of the pre-existing Forest population and its general similarities to the cultures defined by Corded Ware or Globular Amphoræ further west have induced many prehistorians to posit a migration of warlike folk from Scandinavia, Central Germany, or East Prussia² to explain its rise. Admittedly its material bases—its stock and grains—could not have been indigenous

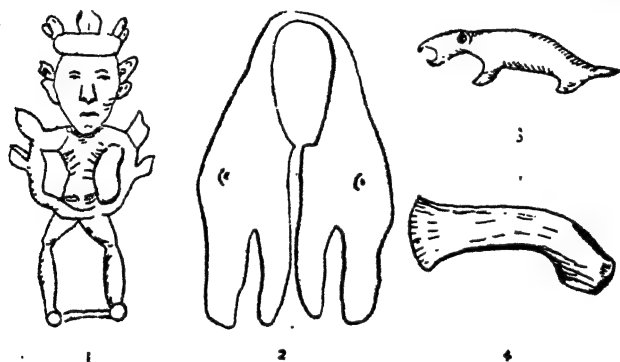


FIG. 81. The Galich hoard, 1-4 ($\frac{1}{2}$); 5, ($\frac{1}{2}$).

to Central Russia but must have been introduced.³ But the nearest source was the Pontic steppe contact with which is explicitly attested by specialized weapon types. Once the basis of the new economy had been thus introduced, the Fatyanovo culture can be regarded as the descendant of the old Forest culture, adapted to exploit the new sources of food,⁴ and accordingly spreading on to new, more suitable terrain.

NORTH SEA-BALTIC BATTLE-AXE CULTURES

In the exceptionally complete archæological record from Denmark layers of ashes in the bogs, followed by peat layers containing cereal pollen, vividly illustrate the arrival of farmers practising shifting cultivation⁵ who cleared the forest by fire

¹ *ESA.*, II, 137 ff.

² Ayrāpāa, *ESA.*, VIII, 101-110.

³ Tretyakov, *IGAIMK.*, 106, 160; Zbru'ev, *SA.*, III, 38.

⁴ Bader, *SA.*, II, 30 ff.; *SGAIMK.*, 1931, No. 3; *IGAIMK.*, 106, 100 ff.

⁵ Iversen, "Landnam i Danmarks Stenalder," *Dansk. Geol. Undersøg.*, R. II, No. 66, 1941.

to provide pasture, and tillage-plots at the beginning of Sub-Boreal times. To the same horizon belong some vases (funnel-necked beakers and amphorae) from votive deposits in the bogs which may bear imprints of Einkorn, emmer and barley. Sometimes the funnel-necked beakers bear cord imprints below the rim (Fig. 77, 5). At Virring in Jutland¹ one such beaker was found in a pit grave just large enough to contain a contracted skeleton. Others come from coastal camps of Ertebølle hunter-fishers, but others again from an agricultural settlement at Havnelev in Zealand.² This was a typical farming hamlet, where the bones of domestic cattle, sheep and pigs enormously preponderate over those of game animals, and really reveals an early stage of the First Northern culture described in Chapter X. Its occupants were already using, side by side with the old core and flake axes, polished axes of flint and polygonal battle-axes though they were far less skilled at making blades than the contemporary hunter-fishers.

They colonized Southern Sweden too. At Siretorp in Blekinge³ farmers, using saddle querns and making corded beakers on which grain imprints can be recognized, settled temporarily on the strand soon after the late Atlantic transgression of the sea. Subsequently a group of Ertebølle hunter-fishers encamped on the deserted site. Later still farmers returned and left in their second encampment, in addition to corded ware, collared flasks and other vases and thin-butted flint axes appropriate to the Dolmens and also a polygonal battle-axe and arrow-shaft-straighteners.

The extension of colonization as far north as Södermannland is illustrated by relics from rectangular house-foundations at Vrå⁴—bones of oxen and a small horse, polished stone adzes and gouges, a polygonal battle-axe, and sherds of funnel-necked beakers (a few cord-impressed) and collared flasks on some of which imprints of bread wheat, emmer and barley grains and wild grape seeds were observed.

The contrast in flint working and in ceramic technique and

¹ Brøndsted, *Danmarks*, I, 130, 338.

² *Aarbøger*, 1940, 18 ff.

³ Bagge and Kjellmark, *Siretorp*.

⁴ Florin, "Vrå Kulturen," *Kulturhistoriska Studier tillägnade N. Åberg*, Stockholm, 1938.

forms between the old Ertebølle culture and that of the farmers, as much as the novelty of their economy proves that the latter were immigrants in Denmark and Sweden; we shall find whence they came on p. 182. Their polygonal battle-axes constitute evidence for a southern origin; for, as Sprockhoff¹ admits, their expanding blades must imitate a metal prototype and actual copper specimens have been found in Sweden and Rugen. But this very expansion differentiates the polygonal battle-axe from any weapon of the true Battle-axe cultures. So too the corded ware of Virring type is technically different from all the rest. Indeed our colonists are not Battle-axe folk at all but develop in Denmark into Megalith-builders. Denmark and Sweden were indeed occupied by typical Battle-axe folk, but only later, about the middle of Montelius II. And their pottery is technically as well as formally different from that of Virring and Vrå.

In Jutland the Separate Grave folk² replaced all remnants of the Gudenaa hunter-fishers and came to occupy the interior of the peninsula to the exclusion of the Megalith-builders, but never engaged in that commerce the results of which allow the several phases of megalithic culture to be arranged in the general scheme of prehistoric chronology. Contact between the two groups was however sufficiently frequent to allow Montelius' chronology for the Northern Stone Age, set forth on p. 177, to be applied also to the Battle-axe cultures. A reliable chronology of these cultures' own development can in turn be based upon successive interments under the same barrow, as on the Pontic steppes.

The oldest graves (Bottom Graves or Undergrave), timber-lined pits³ dug in virgin soil and designed to hold a single contracted corpse, contain the finest battle-axes (often very metallic looking) and beakers with an S profile decorated with cord imprints round the neck (Fig. 82). Next, in graves on the ground surface (Ground Graves or Bundgrave), large enough to hold an extended skeleton, the axes deteriorate and the beakers are decorated with incised herring-bones. Finally the Upper Graves (Overgrave) in the body of the mound contain

¹ *Megalithkultur*, 68.

² Brøndsted, *Danmarks*, I, 215 ff.: *Aarbøger*, 1944.

³ Sometimes encircled by an annular ditch, *Aarbøger*, 1944, 170.

flower-pot vases decorated with rouletted zig-zags, degenerate axes and even flint daggers such as are found in the latest megalithic tombs. They denote the fusion of the two cultures, with that of the Battle-axe folk triumphant.

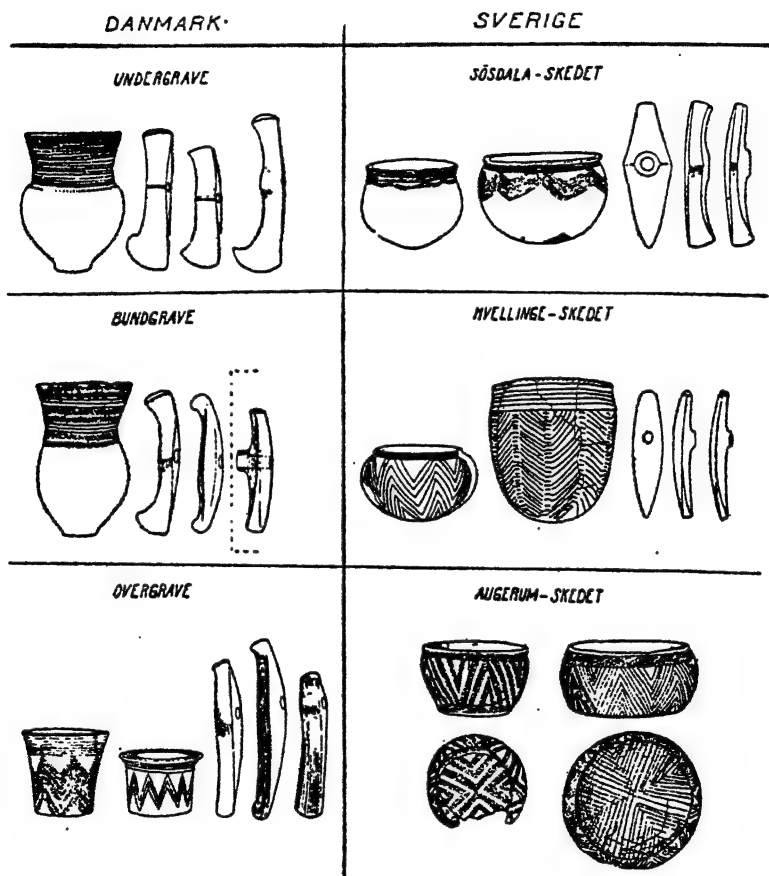


FIG. 82. Pottery and battle-axes from the Separate Graves of Jutland (left) and Sweden (right). After *Fv*, 1922 (17).

The furniture of the Upper Graves shows that the latest phase of the Battle-axe culture in Denmark falls into Montelius' period IV. The prior development represented by only two or three interments in the same barrow cannot cover a vast number of years—indeed perhaps only three generations. But it begins already during the first half of the Passage Grave

period Montelius' IIIb since pottery appropriate to that period has been found in a Bottom Grave in Northern Jutland.¹

In Sweden² separate graves containing contracted skeletons, but not surmounted by barrows, are contrasted to the collective tombs of the agricultural megalith-builders and to the extended burials of a native food-gathering population. They are furnished at first with battle-axes, gouges of flint or greenstone, faceted polishing stones, and shallow beakers decorated round the neck with cord imprints. The battle-axes (Fig. 82) termed boat-axes, are always provided with a shaft-tube which gives them a very metallic look. Indeed a copper boat-axe was found in East Russia, but the tube might be suggested by the tine stump through which the shaft-hole of some antler-axes has been bored. Pottery of this type has been found associated with that in vogue about the middle of the Passage Grave phase (about Montelius' IIIc) while later graves containing rouletted vases like the bottom row in Fig. 82 admittedly belong to Montelius' IV. Very similar graves with the same sort of boat-axes occur also in Finland, Esthonia, and even Norway.³

On the heath-lands of Northern Germany and Holland many barrows covering separate graves, often surrounded by a ring of posts or horizontal timbers, reveal the extension of battle-axe cultures to the English Channel.⁴ The earlier graves are furnished with battle-axes, akin to Jutland types but less finely worked, and S beakers, bearing cord or herring-bone ornament, and exceptionally also with amphoræ of Saxo-Thuringian form. But the Battle-axe folk here came into contact with local megalith-builders (p. 87) and Bell-beaker folk from the west and developed hybrid cultures. S beakers are not seldom found with the later burials in megalithic tombs; from the Bell-beaker group the Battle-axe folk took over their bow and the wrist-guards appropriate thereto and even adopted the roulette technique for ornamenting their beakers and spread the designs in zones over the whole vase-surface in the style regularly applied on Bell-beakers. Nevertheless

¹ *Acta Arch.*, V (1934), 156.

² Forssander, *Die schwedische Bootaxtkultur*, Lund, 1933.

³ *Acta Arch.*, XIII, 216.

⁴ van Giffen, *Die Bauart der Einzelgräber*; Stampfuss, *Jungneol. Kulturen*; NNU., II (1928), 20; Albrecht, "Die Hügelgräber der jüngeren Steinzeit in Westfalen," *Westfalen*, XIX (1934), 122 ff.

the Battle-axe element remained dominant in the resultant fusion.

Even as far west as Gelderland an S beaker has been found with the primary interment in a barrow containing a Bell-beaker with the secondary, so that the Battle-axe folk must have spread so far even in period III.¹ But despite their contact with the metal-using westerners, they retained a neolithic economy throughout the greater part of period IV. While they managed at times to import Danish amber and even English jet, they failed to organize for regular supplies of metal. But a flat axe of metal was found with an S beaker in a cremation grave near Hamburg² and even a palstav (of period V) was allegedly associated with such a beaker.³

Battle-axe cultures arrive late on the Danish islands where the megalith-builders were firmly established, and are represented principally by intrusive elements in late Passage-Graves and only rarely by true separate graves.⁴ The battle-axes approximate to the later Jutland or even Swedish types. The funerary pots are squat S beakers, recurving at the rim and ornamented all over with rouletted zig-zags or wavy ribbons executed with a comb, clearly inspired by the Bell-beaker style. Indeed the Battle-axe folk who reached the islands probably brought with them the Bell-beaker culture's bows and wrist-guards and arrow-straighteners. Judging by a settlement on Zealand⁵ the insular Battle-axe folk lived in rectangular houses, 5 m. long by 4.3 m. wide and entered through the long side, breeding cattle, sheep, pigs, and horses and fishing with hook and line.

SAXO-THURINGIAN CORDED WARE AND ITS CONGENERS

Food-gatherers undoubtedly survived from mesolithic times on the heaths and boulder clays of Central Germany and on the sandy lands further east fringing and interrupting the löss. But here Battle-axe cultures represent neither the first food-producers—those were the Danubians (pp. 97, 107)—

¹ Bursch, *Oudh. Med.*, 1933, 98, insists that neither vases were typical and that the associations of S and Bell-beakers are generally indistinguishable.

² *Kiel-Festschrift*, 1936, 79.

³ Stampfuss, *Jungneol. Kulturen*, 64; cf. also *Oudh. Med.*, 1933.

⁴ *Aarbøger*, 1936, 149 ff., for parallels from Holstein, see *Mannus*, XXVII (1935), 60; cf. Brøndsted, *Danmarks*, I, 269-275.

⁵ *Acta Arch.*, VII, 325.

nor yet the sole result of the acculturation of residual food-gatherers or of the internal development of Danubian society itself. The most important—the *Saxo-Thuringian* to whose pottery alone the term Corded Ware was originally applied—emerges in Central Germany and Bohemia as only one among several groups, all more pastoral and more warlike than any Danubians.

Its distinctive cemeteries of barrows or flat graves are concentrated in the Saale basin, but extend south-east into Central Bohemia and westward to the Rhineland and even Central Switzerland. While common enough on the löss,

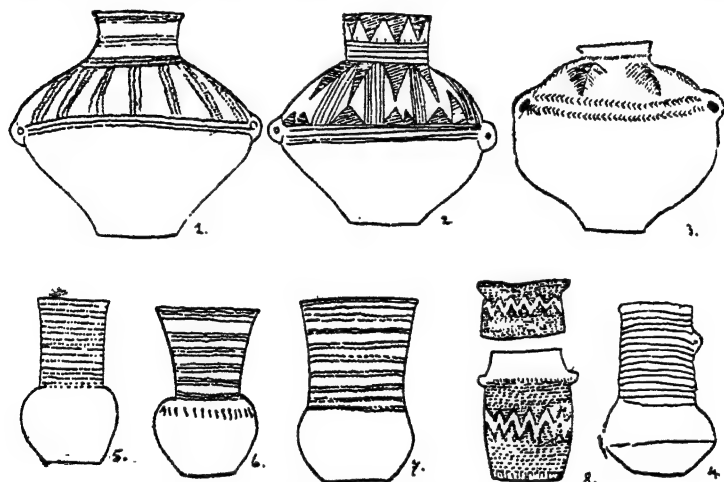


FIG. 83. Saxo-Thuringian corded ware ($\frac{1}{10}$).

Saxo-Thuringian barrows are still more prominent on heaths and uplands as if hunting and stock-breeding had been the foundations of the economy. Yet the cemeteries are too extensive to belong to nomads, and grain imprints on vases¹ prove some sort of cultivation.

Characteristic of Saxo-Thuringian corded ware is the conjunction of amphoræ (Fig. 83, 1-3) with the usual beakers which here have an ovoid body contrasted with a long straight neck (Fig. 83, 4-7). Ornament is effected, as usual, on the earlier vases by cord impressions which then later give place to stamped herring-bone patterns (Fig. 83, 3). Equally distinctive is the faceted battle-axe (Fig. 84, 1) though this is not

¹ *JST.*, XIV, 30; XXIV, 115.

often found in graves and then not with the earliest pottery.¹ Its peculiar form may show some influence from spiked club-heads² of mesolithic ancestry (the Vögtland type), but stray copper battle-axes exhibit much the same form³ and the influence of antler weapons is admitted. Actual antler axes, asymmetrical stone axes like Danubian "ploughshares", almond-shaped celts of flint or greenstone mounted as adzes (one was found thus mounted in an antler haft) and occasional

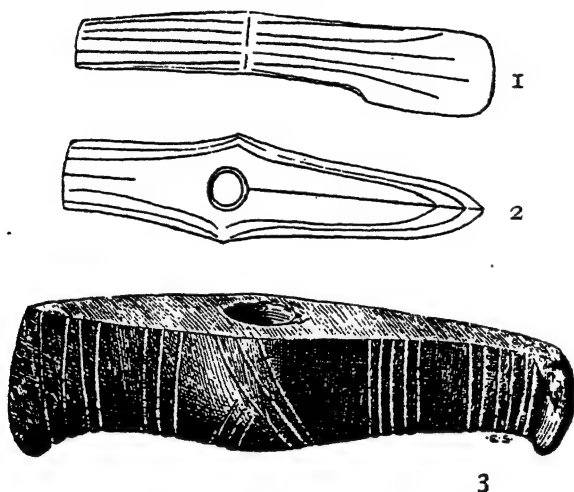


FIG. 84. 1 and 2, Thuringian faceted battle-axe ($\frac{1}{2}$); 3, Marschwitz battle-axe ($\frac{1}{2}$).

spheroid mace-heads or rough flint daggers also served as weapons.

Small rings of copper and even spirals of poor bronze sometimes served as ornaments. But though these were allegedly made from local ores,⁴ the Saxo-Thuringians remained content with a neolithic equipment and armoury. The best evidences for trade of any kind are a carving in East Prussian style and a few other amber beads. Discs made from local shells but ornamented with a cross⁵ constitute the most distinctive additions to the usual bored teeth necklaces.

¹ Forssander, *Bootaxtkultur*, 146.

² *Mannus*, XXV (1933), 271-282.

³ e.g., *Danube*, fig. 92.

⁴ *Nbl.f.d.V.*, X (1934), 146; XIV, 73; Witter, *Die älteste Erzgewinnung in nord.-german. Lebenskreis*. The title of this book is enough for me!

⁵ *PA.*, XL (1934-5), 21.

Normally the Saxo-Thuringians were interred in simple pit graves, rarely in wood-lined shafts, by no means always covered by barrows. North of the Unstrut modest megalithic cists, measuring up to 3.5 m. by 2.25 m. were often used as collective sepulchres.¹ The practice was presumably borrowed from adjacent Northern or Horgen megalith-builders (p. 305), but might have been inspired from the Kuban ² since some are divided by a porthole slab as in Fig. 78, 1. Trephined skulls occur in both Central German and Bohemian graves. In some tombs, mostly late and more often in Western than in Central Germany, the bodies had been burned.

The later phases of the Saxo-Thuringian culture admittedly last into period IV, and grave-groups³ establish synchronisms with Globular Amphoræ and Walternienburg 2 in period III. A beginning in period II might be deduced from corded ware sherds in Danubian village-sites and faceted battle-axes associated in hoards with shoe-last celts, but this deduction is not very plausible.

Westward undeniable Saxo-Thuringian barrows extend to the Rhine and beyond it to Alsace and Switzerland. Eastward the range of Saxo-Thuringian culture is less clearly defined. In the Oder valley itself genuine Saxo-Thuringian types are virtually unknown,⁴ being replaced by the distinct Oder series, but further east the characteristic Saxo-Thuringian ceramic types appear together as if the reflections of at least a cultural colonization from Central Europe although they are always mixed with alien types. So amphoræ and beakers are found in East Prussia, both in settlements and graves, but associated with other forms that might be derived from an East Baltic counterpart of the Virrings culture. Some cultivation and the breeding of sheep, cows, and pigs were combined by some groups with hunting, fowling, and fishing with bone harpoons.⁵

On the Polish löss lands within the great elbow of the Vistula, already intensively colonized by Danubians by period II, Saxo-Thuringian beakers and amphoræ are associated with Oder flower-pots, handled cups, funnel-necked beakers and globular amphoræ that elsewhere denote distinct groups, in

¹ Mannus, XXVIII (1936), 363; *Nbl.f.d.V.*, IX (1933), 93.

² Forssander, *Bootarkultur*, 164; *Arsberättelse*, 1937-8, 38.

³ Altschles., V (1934), 37; Mannus, XXVIII, 376.

⁴ Cf. Altschles., VI, 60-1.

⁵ Altschles., V, 62; *Bl.f.d.V.*, 1933, 41-4.

the *Złota culture* (Fig. 83).¹ Extensive cemeteries of contracted skeletons, generally in flat graves, sometimes in pit-caves, mark the population as sedentary. Ritual burials of cattle, pigs, and horses demonstrate the economic importance of these domestic animals. Battle-axes are not very often included among the grave-goods.

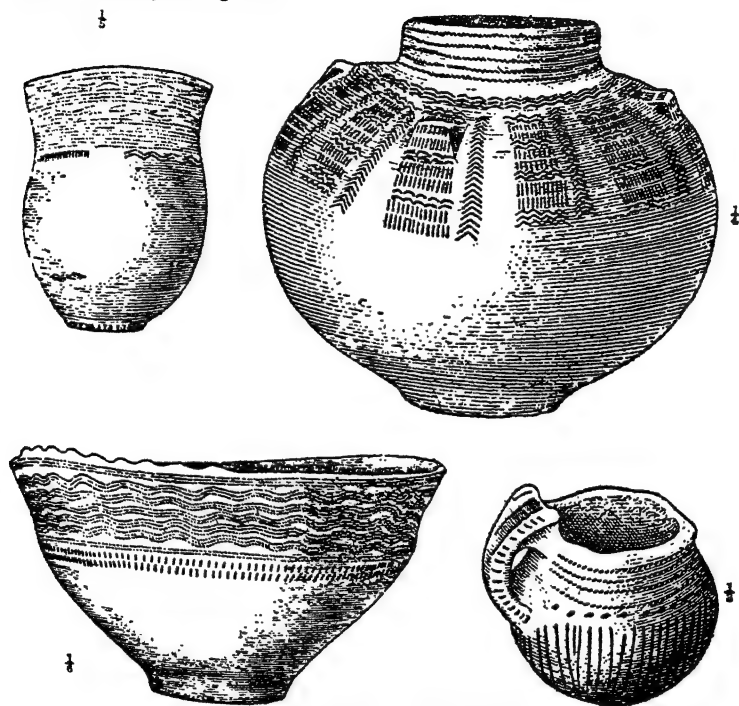


FIG. 85. *Złota* pottery. After Kozłowski.

In Eastern Moravia² one barrow at Nĕmetice covered a shaft grave containing an amphoræ and a beaker and another barrow, one furnished with a faceted battle-axe. But other graves³ ere, as also at Drevohostice and Prusinovice, contained battle-axes of Marschwitz type (Fig. 84, 3) and keeled mugs with cylindrical necks and strap handles derived from the Jordansmühl group; others again Bell-beakers.

Then in East Galicia³ some barrows, girt with a circular

¹ Childe, *Danube*, 152; Kozłowski, *Młodsza*, 66; *W.A.*, VIII, 98; IX, 34.

² *Pravek*, V (1909), 56-130; *Real.*, s.v. *Drevohostice*.

³ *Księga Pamiętkowa*, 141-9; *Światowit*, XVI (1934-5), 117-144; Sulimirski, "Die schurkeramischen Kulturen," 3-5.

trench and heaped *after* the black earth's formation, covered vases of Saxo-Thuringian forms, copper trinkets and even segmented fayence beads.¹ So they must last through Period IV to 1400 B.C. But earlier barrows are known here, covering graves dug before the black earth's formation and corresponding in furniture to Pontic *yamno* graves. Even on the Black Sea coasts themselves near Odessa quite characteristic, if typologically late, Saxo-Thuringian amphoræ were found in graves under two "chieftains' barrows" at Usatova.² But these burials were contemporary with the latest stage, IVc, of the Tripolye culture and not earlier than the Catacomb phase of the Pontic Steppe culture (p. 144).

On the other hand, between these alleged colonies of Saxo-Thuringian culture and its centre on the Saale-Elbe intervene other groups distinguished by corded ware and battle-axes of quite different forms. The *Oder* culture in Brandenburg shares with the Saxo-Thuringian the typical beaker, but is distinguished by the absence of amphoræ and the presence of cylindrical "flower-pot" vases, sometimes with ledge-handles.³ Such are found in pit-graves, occasionally under barrows and at least once containing red ochre, but also in slab cists of Central German type. Other grave-goods include small battle-axes, flint adzes with a pointed-oval cross-section and Danubian "plough-shares" as in Saxo-Thuringia. While occasionally associated with Globular Amphoræ or Walter-nienburg 3-5 pottery (p. 188), a few bronze ornaments and Scandinavian flint daggers⁴ show that the *Oder* culture lasted well into period IV.

In the *Marschwitz* culture of Silesia and Moravia this persistence is more amply demonstrated. The graves contain flower-pots of *Oder* form, but these are accompanied by pouched jugs, decorated with cord-impressions, but of early Unětice shapes (Fig. 60, 1). With them go battle-axes of semicircular section, (Fig. 84, 3), rather like the Fatyanovo form but also wrist-guards, derived from the Beaker-folk and even bronze ornaments. The whole group probably belongs to period IV and occupies economically as well as geographically

¹ Kostrzewski, *Prehistoria*, 183.

² S.A., V (1940), 242 ff.

³ Sprockhoff, *Mark-Brandenburg*, 60 ff., 160; *Mannus*, XXVIII, 374.

⁴ Forssander, *Ostskandinav.*, 60; Böhm, *Bronzezeit Mark-Brandenburg*,

an intermediate position between the Bronze Age culture of Bohemia and the still neolithic culture of the lower Oder.

ORIGIN AND SIGNIFICANCE OF BATTLE-AXE CULTURES

The cultures of several peoples that in historic times spoke Indo-European languages can plausibly be derived directly from those just described, and the list could be further enlarged if the cord-ornamented sherds from Macedonia and Central Greece (pp. 68, 83) be accepted as evidence for a battle-axe culture in the Balkans. Hence, if the several cultures considered in this chapter, be all provincial varieties of a single culture, the latter could be identified with that of the hypothetical "Aryans" or Wiros, the speakers of the hypothetical "parent speech" from which Sanskrit and Welsh, Persian and Gothic, Greek and Russian, Latin and Lithuanian should have been descended.

Now most prehistorians have in fact tried to derive all the distinct battle-axe cultures from one such culture whose authors' migrations should explain the emergence of the distinct local groups that are actually reflected in the archaeological record. Kossinna¹ had argued by 1910 that the parent battle-axe culture originated in Jutland as a result of the acculturation of autochthonous Maglemoseans by contact with megalith-building and Ertebølle immigrants. From Jutland the bearers of the resultant neolithic culture would have expanded with their battle-axes to the Balkans, Troy and the Caucasus. Åberg² subsequently elaborated his thesis, and now the Virrings culture has come to light as if in answer to their evocations.

Danish archæologists, on the contrary, have always maintained that the Separate Grave culture was intrusive in Jutland, and Brøndsted takes the same view of the earlier Virrings culture. Rydbeck³ and Forssander⁴ regard the Boat-axe culture as equally intrusive in Sweden. Even in Germany⁵ since the loss of Schleswig by the "Versailles

¹ "Ursprung und Verbreitung der Urfinnen und Urindogermanen," *Mannus*, I-II.

² *Das nordische Kulturgebiet* (1918); *Kultur-motsättningar* (1937).

³ *Arsberätt.*, Lund, 1937-8.

⁴ *Bootsaxkultur*.

⁵ So Schwantes, *Geschichte Schleswig-Holsteins*, I; Tode, *Mannus*, XXVII, 45; Sprockhoff, *Hiri-Festschrift*.

Diktat" the tendency has been to transfer the cradle of the Danish-Scandinavian cultures to the more thoroughly Germanic soil of Saxo-Thuringia. In Finland Tallgren and Åyräpää too were inclined to find the roots of the Fatyanovo culture in the same direction and to derive from it some at least of the Pontic cultures. So the culture denoted by Saxo-Thuringian corded ware—resulting according to Bicker¹ from the acculturation of a Central German mesolithic stock, according to Agde² from a cross between late Danubians and megalith-builders—would be the parent of the Danish and Scandinavian cultures as well as of the eastern groups.

On the contrary twenty-five years ago J. L. Myres suggested deriving the Saxo-Thuringian and Separate Grave cultures from the Pontic, reversing Kossinna's migrations. Borkovskij³ has pointed out how well the ovoid beakers from the earlier Pontic graves would serve as prototypes for the Central and North European vases. Sulimirski⁴ accepted his conclusions, but postulated a subsequent reversal of the flow to explain the Saxo-Thuringian pottery in the later Ukrainian barrows (p. 171). Forssander⁵ seems inclined to think that the makers of Globular Amphoræ came from the Caucasus bringing with them the idea of the porthole cist and the pit-cave, but still regards the Central and North European battle-axe cultures as rooted in the Saxo-Thuringian that would of course have absorbed Pontic elements. The discovery of a hammer pin⁶ in a passage grave on Zealand in a deposit of Montelius IIIc that looks like a local copy of an imported Pontic article might in any case be held to prove influence from the Pontic culture even on Denmark, but several rather similar pins have subsequently been recognized from Central German and East Prussian graves of Danubian IV.⁷

Perhaps the traits actually common to the several distinct Battle-axe cultures are too few and too abstract to afford sufficient basis for the assumption of a migration in either direction. In any case Soviet archæologists have challenged

¹ *Mannus*, XXV (1933), 249; XXVIII, 415.

² *Mannus*, XXVIII, 369; *Altischlesien*, V, 41.

³ Snurova keramika na Ukraïne, *Obzor*, IX (1930); *Pam. Arch.* (1933).

⁴ "Die schnurkeramischen Kulturen," *La Pologne au VII-e Congrès internat. des Sciences historiques*, Warsaw, 1933.

⁵ *Bootaxkultur*, 174, 213.

⁶ *Aarbøger*, 1929, 204.

⁷ *Mannus*, XXX (1938), 323-6.

that assumption and sought to explain the observed agreements without recourse to folk-migrations. In the temperate zone the distinctive emphasis on pastoralism and hunting would be on the natural line of economic development from hoe-cultivation or even hunting and fishing. Warfare and the multiplication of weapons, small patriarchal households, and individual burial, greater mobility and intensified exchange would be the consequences of this economy under which the ownership of herds tends to pass into the hands of individual males and exalt men over women in society; the common ritual and artistic traits would be just parts of the ideological superstructure. The original Indo-European dialects themselves might result from the adjustment of language to the requirements of intercourse under the new social order. In a remarkable article Krichevskii¹ has shown how many features of the Battle-axe cultures—the use of cord impressions to decorate pots, fortifications of settlements, ochre in graves—appeared already in Danubian II.

The Soviet account is certainly more economical of undemonstrable assumptions than any migrationist interpretation. But there are difficulties in Krichevskii's version that the Battle-axe cultures arose out of Danubian and Black-earth peasant cultures as a result of purely internal social development. The primary centres of the former lie at best on the fringe of the peasants' territories, but on lands sparsely settled from mesolithic times by gatherers. The eponymous trait of these cultures, the battle-axe, was derived (p. 147) in the last resort from the antler axes used by hunter-fishers since Boreal times; corded beakers could be traced back to their ovoid pots or their pre-ceramic models; and they too strewn the dead with ochre. Hence the battle-axe cultures should be the resultant of the social development of the hunter-fishers who formed a continuum across the Eurasian plain.

But this development could hardly be understood without reference to external stimuli. No hunter-fishers on their own could have started breeding sheep or cultivating cereals in Denmark, Sweden, or Central Russia where no sheep nor cereals grew wild. The stone battle-axes were derived from antler axes, not so much directly as through metal translations.

¹ "Indogermanskii vopros arkheologicheskii razreshennyi," *IGAIMK.*, 100 (1933), 158.

Food production and metal were alike introduced in most of the battle-axe provinces. But introduction need not imply migration, but only diffusion. In a word the battle-axe culture would result when certain food-gatherers adopt food-production and acquire some metal weapons. The agreements enumerated can be comprehended when we recall that the food-gatherers in question had formed a continuum through which substances—and ideas—could be transmitted, and still better if the new elements came to each local group from one common centre. Such might be sought either in the Danubian province with its Ukrainian extension or beyond the Caucasus and the Black Sea in the Ancient East. Now in Central Russia the Fatyanovo culture had received the decisive impulse from the Pontic steppes and in Poland the pit-caves of the Złota culture point to the same province. But it might have been irradiated from the Danubian societies west of the Dniepr as well as from Asia. To-day evidence exists for the transmission of cultural elements northward over the European plain but not for the exact routes or mechanisms whereby the transmission was effected. We may admit that the core of the Fatyanovo, Virrings, and Saxo-Thuringian societies was composed of descendants of Maglemosean savages, but cannot exclude the possibility that their conversion to barbarism was effected by the advent of a pastoral ruling class ejected by Pontic or Danubian tribes.

If it be desired to equate the archæological facts with philological speculations, the Indo-European languages might be regarded as the consequence of adapting a series of savage dialects to be means of intercourse in pastoral, warlike, and patriarchal societies with new interests, material and social.

CHAPTER X

THE NORTHERN CULTURES

THE Danubian peasants who had certainly advanced to the coasts of the Baltic had invaded a domain already populated by fishers and hunters of the Forest culture-cycle (p. 9). Megalith-builders, Beaker-folk, and other Westerners, to be described in succeeding chapters, reached the same territories both by sea and land. The acculturation of mesolithic survivors through contact with immigrant groups explains the emergence in Germany, Denmark, and Southern Sweden of a bewildering variety of individualized neolithic cultures, all generally lumped together under the misleading racial term Nordic, for which the less colourful but more accurate designation Northern will be here substituted. Divergently specialized communities of Forest denizens, acquiring domestic stock and cereals from different intruders or neighbours, multiplied and elaborated the equipment they had borrowed into a variety of neolithic cultures some of which have been described in the last chapter.

The development is most spectacular and also best studied in Denmark, Schleswig-Holstein, and Southern Sweden. Here the recent moraines offered the farmer more fertile soils than the older moraines in the rest of North Germany and Holland.¹ Here, too, sea-borne influences from the West were most direct and fruitful. Moreover, the Danish and Swedish monuments and relics have been studied by an exceptionally brilliant school of antiquaries who had established a skeleton culture-sequence last century. Montelius had divided the Northern Stone Age into four periods based principally on the typology of axes and tombs. His system, which has become a standard, was as follows :

Montelius' Neolithic.	Flint Axes, etc.	Tomb.
I.	pointed-butted.	
II.	thin-butted.	Dolmens (Dysser).
III.	thick-butted.	Passage Graves.
IV.	daggers.	Long Stone Cists or Gallery Graves.

¹ Sprockhoff, in *Hirt-Festschrift*, 265.

This system survives to-day only with substantial modifications. The axe with pointed butt (Fig. 86, 1) is doubtless the final derivative of the series of unpolished mesolithic axes, but it cannot be the ancestor of the thin-butted axe, being at best contemporary therewith or even posterior.¹ Period I is defined by pottery and pollen. Period III can be subdivided, thanks to the sequence established by successive interments in the same tomb, into four phases, distinguished by the letters a to d.² But thin-butted celts were still normally used in phases IIIa and IIIb,³ and the earliest daggers probably go back to IIIc. Moreover, many tombs, formally dolmens, must on account of their furniture be assigned to periods III or even IV. In Sweden no dolmen contained relics typical of Montelius' II! The thesis that Dolmen, Passage Grave, and Long Cist mark stages in a self-contained typological evolution is no longer accepted.

But Montelius' disciples and imitators have clumsily extended his system beyond the regions for which it was devised and have used it as a frame of reference into which cultural phenomena in Central Europe, South Russia, and even Turkestan must be fitted. From a fog of misconceptions and distortions they have evoked a "Nordic myth". The "Nordic" cultures, crystallized in Montelius' II, would have expanded in periods III and IV till they reached the Balkans, Anatolia, and the Caucasus.⁴ These fantasies were never accepted in Denmark and have recently been emphatically rejected in Sweden and even Germany. An explicit refutation here is accordingly superfluous.

MONTELIUS NEOLITHIC II

In Denmark Period I is now represented by the pottery and other relics from Havnelev, Virring and votive deposits, described on p. 162. In Period II, as defined by ceramic typology, the local development of the same First Northern culture can be

¹ Nordmann, "Megalthic Culture," 4; Sprockhoff, *Megalthkultur*, 66. But cf. Brøndsted, *Danmarks Oldtid*, I (1938), 130 ff., and Rydbeck's criticisms, *Årsberätt.* Lund, 1937-8, 136 ff. and Troels-Smith, *Acta Arch.*, VIII (1937), 294.

² Cf. Eckholm, "Nordischer Kreise," in *Real.*, IX, 42, and Mathiasen, *Acta Arch.*, XV, 89-97.

³ Sprockhoff, *Megalthkultur*, 4.

⁴ e.g. Åberg, *Das nordische Kulturgebiet*, and Reinerth, *Chronologie der jüngeren Steinzeit*. For apt criticisms, see Petsch, *PZ.*, XX (1929), ii., and Krichevskii, *IGAIMK.*, 100 (1933), 159-202

illustrated from settlements and graves. The village of Barkaer in Jutland¹ consisted of fifty-four one-roomed rectangular houses arranged on either side of an open space in two continuous rows, each 85 m. long.

The farmers still used thin-butted axes of polished flint with rectangular cross-section (Fig. 86, 2), but now also others of fine-grained rock, splayed at the blade as if in imitation of metallic models.² Arrows, tipped with transverse heads and polygonal

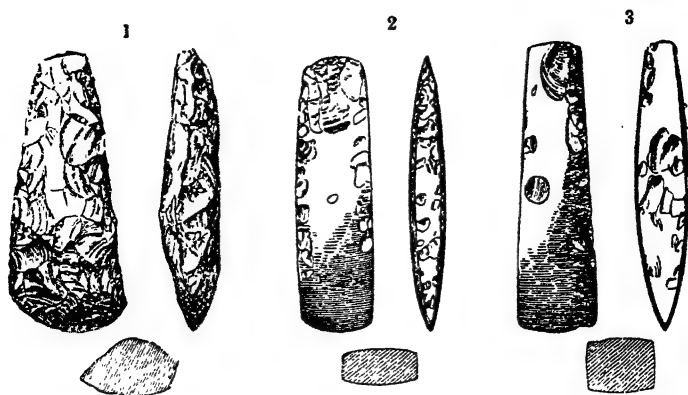


FIG. 86. Northern flint axes arranged according to Montelius' typology. By permission of Trustees of British Museum.

battle axes were used as weapons together with tongued club-heads like Fig. 89, 1. Amber beads, occurring already in the votive deposits of Period I were worn and valued for their magic electrical properties. But a skeleton buried in an earth grave at Salten, Jutland,³ wore also a bossed copper disc that can be exactly matched in the graves of Brześć Kujawski (p. 114). This import thus establishes an exact synchronism between Northern Period II and early Danubian III.

The pottery of Period II is a development of that described on p. 162, but lacks the simpler cord impressions. It appears in three unmistakable forms—collared flasks, funnel-necked beakers and amphorae (Fig. 97). The vases are often plain, sometimes decorated by pits and by ribs, incisions or impressions of whipped cords, always so as to produce vertical

¹ *Fra National museums Arbejdsmark*, 1949.

² Illustrated by Nordmann, "Megalithic," fig. 63.

³ *Aarbøger*, 1947, 250-5.

patterns. As charms and ornaments amber beads, sometimes decorated in the drill-technique inherited from Maglemose times, and strung together in necklaces of several strands kept apart by spacers, were worn.

The classical method of disposal of the dead, which gives its name to the whole period in Denmark, was ceremonial burial in a megalithic dolmen or dyss. In its oldest form a dyss is a small chamber formed by four uprights supporting a single large capstone, and less than 6 ft. long by 2 ft. wide.¹ Such small chambers sound as if they were designed to contain a

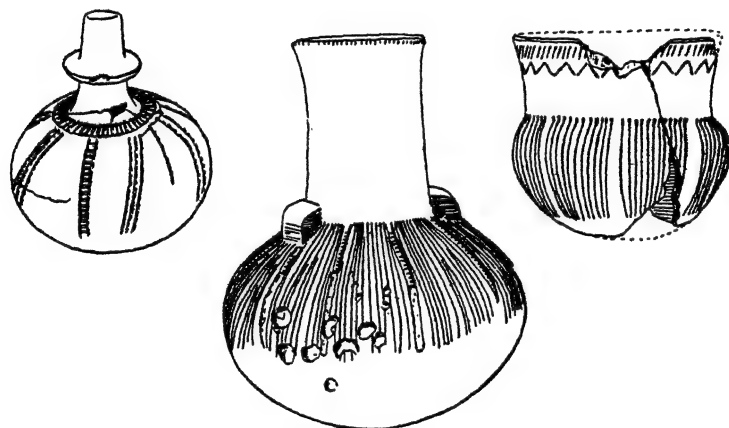


FIG. 87. Pottery from Danish dysser ($\frac{1}{4}$).

single corpse only; though as many as six skeletons² have been found in one, they cannot rank as collective tombs. Later, one end-stone is generally lower than the remaining uprights leaving an aperture through which subsequent burials might be introduced after the completion of the tomb. A rare and archaic-looking variant of the dolmen is an enclosure of inward tilted slabs not supporting a capstone, but converging or even meeting at the top.³ Small polygonal chambers with a rudimentary passage and rectangular chambers with more than two side-stones have also yielded relics of the kind described above and are accordingly classed as dysser by Danish

¹ *Aarbøger*, 1941, 63-8; 1947, 266.

² Nordmann, "Megalithic Culture," 26.

³ *Aarbøger*, 1936, 1-8.

authorities. Dolmens of all types were normally partially buried by mounds, sometimes round but often long and rectangular and demarcated by a peristalith of large boulders.

The distribution of dolmens along the Danish coasts indicates a population of accomplished seafarers. Indeed, both the basis of the new economy and the metal tools that were imitated in stone might have reached Denmark by sea. But no regular supplies of metal were obtained by this or any other route. The economy of the dolmen-builders is typically neolithic though they lived when societies in Central Europe or Britain were already in a Copper Age.



FIG. 88. Grave 28 at Jordansmühl. After Seger.

But even in Denmark and Schleswig-Holstein people might be buried in non-megalithic earth-graves accompanied by a typical "dolmen" equipment of thin-butted axes, collared flasks, etc.¹ In such burials one or rarely two corpses were laid extended on the ground surrounded by a setting of boulders, as in Fig. 88, and sometimes covered with an elongated mound (in contrast to "Battle-axe" burials, contracted in a pit under a round barrow).

Now similar non-megalithic graves, containing collared flasks, funnel-necked beakers, amphoræ, polygonal battle-axes (Fig. 89), and amber beads extend right across Eastern Germany and Poland to the Upper Vistula.² And so the First Northern culture revealed in the Danish dolmens can be seen as one

¹ Forssander, 1935-6, 2 ff.; *NNU.*, X (1936), 22 f.; *Aarbøger*, 1936, 15; Brøndsted, *Danmarks*, I, 162, 344.

² Jazdrzewski, *Kultura Pucharów Lejkowatych w Polsce* (Bibliotheka Preh., 2), Poznań, 1936.

specialized facies of a wider cultural continuum. In its eastern extension megalithic collective tombs are lacking—in only one instance in Poland were relics of this sort recovered from a Kujavish grave like Fig. 95, but even so not from a megalithic chamber within the trapezoidal setting of boulders. Moreover axes tend to be made of fine-grained stone or, if of flint, to be left in the rough form of Fig. 89, 3, while the pots (e.g. Fig. 90) diverge substantially from Danish shapes. Probably

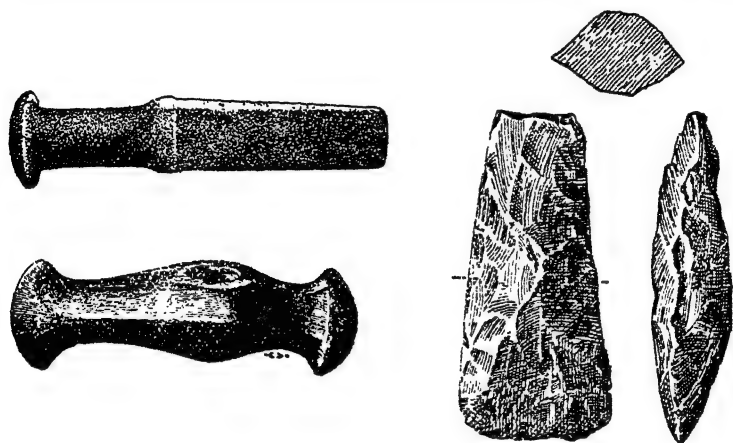


FIG. 89. Tongued club-head, Denmark. Polygonal battle-axe, Jordansmühl ($\frac{1}{2}$), and flint axe of Eastern type ($\frac{1}{2}$).

too the First Northern culture lasted longer here, unaffected by the stimuli associated with the Passage Graves in Denmark. But nothing shows that it began later in the East than in the West. On the other hand, in North-West Germany and Holland,¹ collared flasks and funnel-necked beakers and even thin-butted axes² are found in megalithic tombs, but the vases are decorated in the basketry style appropriate to the Danish passage grave period and generally associated with relics proper to Montelius' III. The manifestation of Northern culture in this area seems therefore later than east of the Oder or in Denmark.

If the foregoing account be correct, Montelius' period II

¹ Sprockhoff, *Megalithkultur*; van Giffen, *De Hunnebedden in den Nederlanden*.

² *NNU.*, IV (1930), 36; these diverge from the Danish form and do not fit in Montelius' typological scheme.

is later than Danubian II. For the reliable synchronism, provided by an import in Denmark (p. 178), points to Danubian III. Now at Jordansmühl the collared flasks and funnel-necked beakers of the First Northern culture are associated in a grave (Fig. 88) with Danubian pottery of that period (p. 114). So the First Northern culture, just described between the Elbe and the Vistula, is contemporary with its manifestations in the dysser of Denmark and not derived therefrom. On the contrary in this very region stray beakers and amphorae are known¹ that are parallel to those of Montelius I in Denmark and at least as old.

Now it was precisely between the Elbe and the Vistula that Danubian I peasants spread furthest into territories, occupied since Boreal times, by Forest folk (they actually reached the

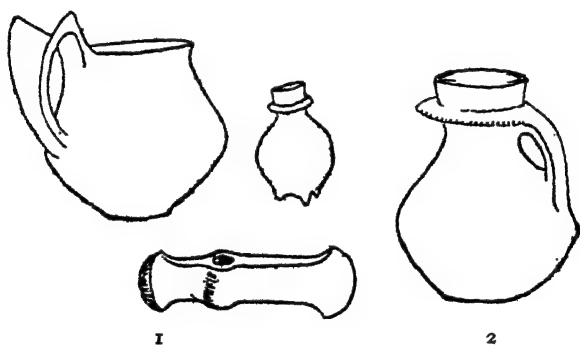


FIG. 90. Furniture of a grave at Zastow (†), and collared flask from grave at Nalenczow (†).

Baltic coasts here). The latter could acquire from the intruding peasants cereals, domestic stock and the rudiments of a rural economy. On the other hand many traits in the First Northern culture—burial in the extended position, the deposition of votive offerings in bogs, the preference for flint as material for axes, the transverse arrow-head and even the polygonal battle-axe derived through copper translations from the antler weapon—are rooted in the ancient Forest tradition. So the genesis of the First Northern culture can be understood as the acculturation of Forest savages by immigrant Danubians. Then the novice farmers would have spread, slashing and burning their way to Sweden and Denmark as described on p. 162 there to develop the dyss and the culture of Montelius II.

¹ Becker, "Mosefundene Lerkar," *Aarbøger*, 1947, 206 ff.

THE DANISH PASSAGE GRAVES

In Montelius III about the time of the last marine transgression new influences affected both the architecture of the megalithic tombs and their furniture. The spacious passage graves were used as collective sepulchres by clans for several generations; for they may contain as many as a hundred skeletons¹ and pottery of several styles the succession of which serves as a basis for the sub-division of the period. But owing presumably to the need for fresh land as old plots became exhausted, the settlements were shifted more often and yield as a rule pottery of only one stylistic phase.² A settlement of the first phase at Troldebjerg on Langeland³ consisted of several apsidal huts, 13 to 18 ft. long and a continuous row of rectangular buildings with a total length of 71 m. Two of these were certainly houses each about 28 m. long and apparently subdivided so that one end was occupied by humans, the other by cattle. The gabled roof, about 11 ft. high, sloped down to the ground on one side and on the other rested on a wall only 6 ft. high. (Obviously these houses have nothing to do with the Ægean and Balkan megaron type.) They could accommodate a household larger than the "natural family"—i.e. a clan—whose deceased members might rest in the spacious passage grave.

Hunting was now relatively unimportant. Common wheat in addition to *Einkorn*, emmer, and flax may already have been cultivated.

Specialization in industry is attested by the existence of communities of flint-miners and by specialized tools such as gouges for the carpenters. Trade was sufficiently developed to secure for the Passage Grave-builders a certain number of metal tools and ornaments. A hoard found in Bygholm in Jutland⁴ and dating from the very beginning of the period, comprised four flat axes, a dagger with midrib on one face, like Fig. 128, 1, and two arm-cylinders. The dagger seems to be an import from the Iberian Peninsula and should establish a synchronism with the Copper Age of Alcalá and Los Millares (p. 268). A distribution map of copper axes in Denmark and

¹ Nordmann, "Megalithic Culture," 28.

² Mathiassen, *Acta Arch.*, XV, 88.

³ Winther, *Troldebjerg* (Rudkøbing), 1935, and Tillaeg, 1938.

⁴ Nordmann, "Megalithic Culture," 131, fig. 60.

Schleswig-Holstein suggests that they were imported by sea though some of them may have come from Hungary.¹ Halberds have a similar distribution to axes and certainly were brought by sea from Ireland.² Amber was presumably the principal export bartered for metal and was very likely worked locally to form necklaces. Beads reached Brittany, Central France, and the Iberian Peninsula and, as we saw, were common

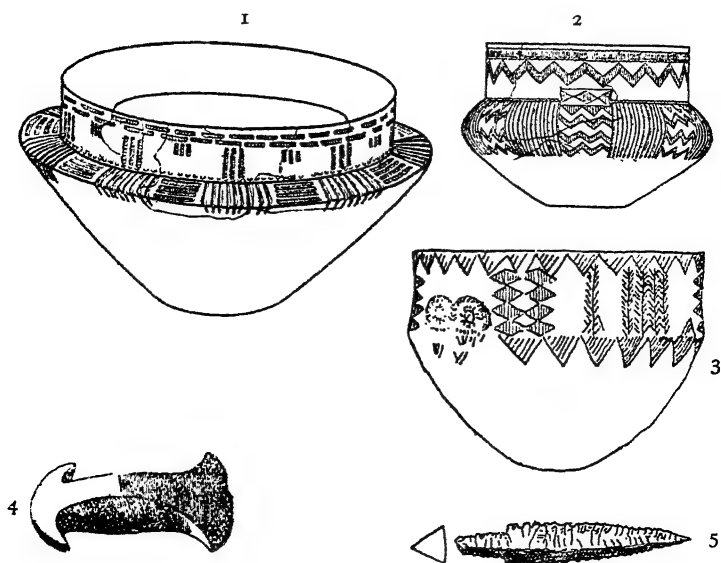


FIG. 91. Pottery (1, 2), double axe (3), and arrow-head (4) from Danish Passage Graves.

throughout Central Europe in Unëtician times. In exchange the Danes obtained hammer-headed pins of Pontic type³ by phase IIIc and gold lock-rings and bronze pins of Unëtician forms⁴ by phase IIId. But the supplies obtained by such barter were quite insufficient to allow metal even to compete with stone and bone. Even the ornaments imported are mostly inferred from bone imitations made locally.

The emergence of Battle-axe folk during the period (p. 163),

¹ Forssander, *Ostskandinavische*, 10, 51, etc., Kersten, *Zur älteren nordischen Bronzezeit*, 72, 98.

² *Arch.*, LXXXVI (1936), 277.

³ Aarbøger, 1929, 204.

⁴ Nordmann, "Megalithic Culture," 118; Hansen, *Gotlands Bronsålder*, 14; Forssander, *Ostskandinavische*, 101-6.

combined with the increased competition for land as the population grew, intensified militarism. The outstanding weapons are stone double-axes, imitating Ægean metal models transmitted up the Danube thoroughfare (p. 113) (Fig. 91, 4), flint daggers, disc-shaped mace-heads of Danubian origin and flint arrow-heads, either transverse or derivatives of the mesolithic tanged Garnes points, in the later versions triangular in section as if in imitation of bone models (Fig. 91, 5).

The earlier pots, including funnel-necked beakers, are decorated with patterns executed with whipped or braided cords and arranged vertically or in panels thus carrying on the traditions of Montelius' II.¹ Still in the settlement of Troldebjerg the distinctive innovations of deeply cut or stamped incisions in what Sophus Müller called "the grand style" and even cardial decoration (p. 262) already appear and with them new, Danubian forms—the pedestalled bowl and the socketed ladle.² In a later settlement, like Blandebjerg,³ phase IIIb, the technique of deep incision is completely dominant and is used to form basketry patterns on angular vases, inspired by basket models (Fig. 91, 1) and derived from North-west Germany or the early Walternienburg group of Central Germany. Next in IIIc the profiles are rounded off (Fig. 91, 2) and rouletted lines, presumably derived from the Bell-beakers (p. 220) replace the cardial technique in shading. Finally in Montelius' IIId the shapes are further simplified while simple incision or stab-and-drag lines were preferred to rouletted ones for the sparing decoration. This, however, includes oculi motives (Fig. 91, 3) recalling the Copper Age of Almeria.

Of the domestic pots 50 per cent were decorated in IIIa at Troldebjerg, but the percentage had fallen to 4 per cent at Lindø in IIId. Still at all times such vessels were ornamented with pits in the native Ertebølle tradition indicating how large a proportion of the old population was absorbed in the new farming societies.⁴ Yet of course unabsorbed groups of food-gatherers survived.

¹ I follow the division established on the basis of settlement finds by Mathiassen in *Acta Arch.*, XV, (1944), 89-97, rather than that of Eckholm, *Real.*, IX, 42.

² Forssander, *Arsberättelse*, 1935-6, 34-57; Jazdrzewski, *Kultura Puławy*, 333.

³ Winther, *Blandebjerg*, Rudkøbing, 1940.

⁴ Forssander, "Gropornerad Megalithkeramik," *Arsberättelse*, 1930-1, 10-30.

As a communal ossuary the Passage Grave replaces the simple dyss. It cannot be regarded as derived from the latter, as Montelius' disciples have contended, but reflects fresh



FIG. 92. Amber beads from Passage Graves ($\frac{1}{2}$).

influence from the West, explicitly imitating the corbelled tholos of the Atlantic coasts (p. 209). The earliest passage graves, standing closest to the models, are polygonal chambers sometimes with a cell attached, entered through a long passage and covered with a circular mound. In later versions the chamber is elongated at right angles to the passage. Passage graves served of course as family vaults.¹ Some contain as many as a hundred skeletons. But in others the earlier interments with their gear had been removed and reburied outside the vault to make room for subsequent burials.

Imports and copies thereof, sometimes found in stratified horizons in the tombs, establish the chronological relations of Montelius' III with cultural sequences elsewhere. Objects of Unëtician type, assignable to Montelius' IIIId, show that the Passage Grave period lasted into Danubian IV. Bell-beakers imported probably from Bohemia² establish a synchronism between Montelius' IIIc and the final phase of Danubian III. The Danubian II forms surviving in the Passage Grave pottery, fix that period as an upper limit for Montelius' III, but the whole really should fall within the limits of Danubian III and last into IV. At the same time the hammer-pin, assigned to Montelius' IIIc, establishes a partial synchronism between that phase and the Middle Kuban stage in South Russia. Finally the copper dagger from Bygholm, taken in conjunction with the sepulchral architecture, suggests that Montelius' Neolithic III in the north is no earlier than the Los Millares phase of the Copper Age in the Iberian Peninsula (p. 268).

NORTH-WEST AND CENTRAL GERMANY DURING MONTELIUS' III

In Passage Grave times no mass immigration, unless an invasion of Battle-axe folk be assumed (p. 163), affected

¹ Nordmann, "Megalithic," 28 ff.

² Ibid., 122

Denmark, but the changes in funerary architecture and pottery indicate substantial infiltrations from the west and south-west respectively. The basketry vases of phase IIIb in Denmark and Sweden, like the Rössen pottery of Southern Germany, may have been made by mesolithic folk who had used baskets before they learned to make pots. In North-West Germany and Holland, basketry vases (including pedestalled bowls and socketed ladles of Danubian II ancestry) are found principally, but not exclusively, in megalithic tombs termed Huns' Beds, and represent what is sometimes termed the Elbe-Weser culture. The burial chambers, sometimes small megalithic cists, but growing into very long galleries entered by a short passage in the middle of the long side, are normally covered by a long mound supported by a setting of huge boulders and might be parallel to the Danish long dolmens. The preference for polished flint axes and the use of collared flasks and funnel-necked beakers (sometimes decorated with whipped cords) suggest that the First Northern culture had combined with the Danubian in the acculturation of this region. Moreover, in Westfalia and Thuringia SOM settlers from the Paris basin (p. 305) introduced the gallery-grave with porthole entry.¹ Though in the long stone cist of Fritzlar near Züschen the wall-slabs are decorated with mysterious patterns of Western affinities, the grave goods comprise mainly Northern types such as collared flasks.

The Elbe-Weser culture cannot be so accurately subdivided as its Danish counterpart, but apparently lasted into the beginning of Danubian IV. A gold armlet from an earth grave at Himmelsporten near Stade² may be attributed to this period. But with the later burials in the Huns' Beds, Bell-beakers and Corded beakers illustrate the increasing dominance of Beaker and Battle-axe folk over the megalith-builders and basket-makers.

The *Walternienburg-Bernburg*³ culture on the Lower Saale and in Havelland may again be due to a mesolithic population converted to food-production. The angular vases, classed as *Walternienburg I*, are obviously copies of basketry vessels (Fig. 93), but in the later styles the basketry origin is forgotten.

¹ Sprockhoff, *Megalithkultur*, 59 ff.

² *NNU.*, VII (1933), 50; X (1936), 22.

³ Sprockhoff, *Megalithkultur*, 106-116; Childe, *Danube*, 133-9.

Pottery of this sort is found in simple pit-graves, grouped in small cemeteries, in megalithic cists or galleries, in Huns' Beds with lateral passage and in cists of thin slabs. Axe-heads were made by preference of Wida shale from the South Hartz; the rest of the Walternienburg equipment seems to be derived indiscriminately from various Northern and foreign cultures. It includes double-axes of Passage Grave type, amber beads, crutch-headed pins, perhaps derived from the Pontic hammer-pins, and metal ornaments of Unëtician type or bone copies of such. The culture, while beginning in Northern period III lasts therefore well into Danubian IV.

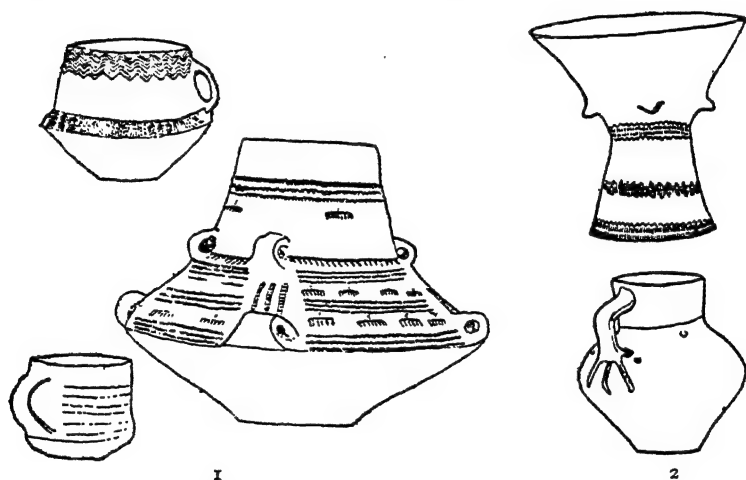


FIG. 93. Walternienburg vases, Latdorf drum, and jug.

Related to the Walternienburg-Bernburg group is the culture typified by and named after the *Globular Amphoræ*.¹ The type-vase like the other vessels habitually associated with it, is clearly a copy of leather models and is always decorated in a very distinctive manner round the neck, with fillets hanging over the shoulder (Fig. 94). The characteristic vases are accompanied by small trapeze-shaped axes and chisels of flint, frequently of the banded variety mined in Galicia, transverse and tanged arrow-heads, bored teeth and boars' tusks, amber beads and, east of the Oder, ornate bone girdle-clasps. Antler axes, double-axes of stone, flint knives and other articles were

¹ Sprockhoff, *Megalithkultur*, 120-130; *Mark-Brandenburg*, 108; *JST.*, XXVIII (1938).

occasionally borrowed from contemporary groups. Ring-pendants of bone and other ornaments characteristic of the Scandinavian long cists, and bronze rings and spirals demonstrate the survival of the culture during period IV.

The makers of these vases might be interred, extended, in simple trench-graves forming cemeteries of not more than twelve graves, cremated, or buried, generally squatting, in collective tombs, containing as a rule not more than seven

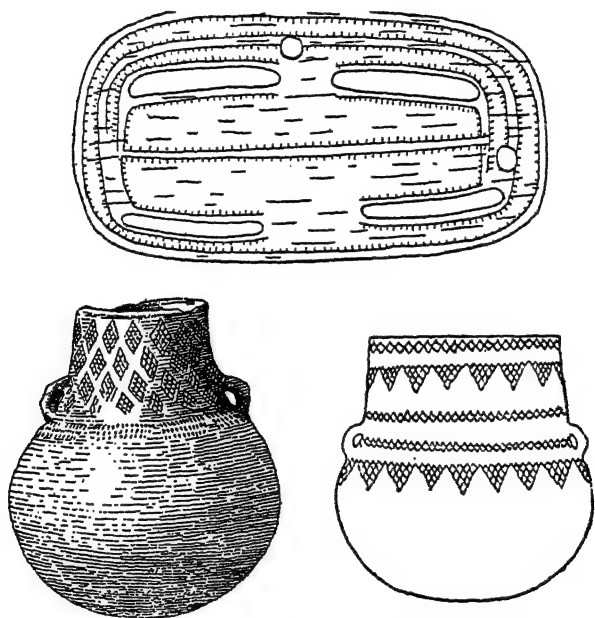


FIG. 94. Bone girdle-clasp, Podolia ($\frac{2}{3}$) and globular amphoræ, Saxo-Thuringia and Podolia ($\frac{1}{2}$).

corpses and generally less. The collective tombs are sometimes megalithic cists which in Poland may be covered by long barrows surrounded with a trapeze-shaped peristalith of large boulders—so-called Kujavish graves (Fig. 95)—or large cists made of thin slabs. The latter are often divided into two compartments, sometimes by a porthole slab.

The principal concentration of Globular Amphoræ is in the Saale-Elbe region and Havelland, but they extend northward to Rügen, southward into Bohemia, and eastward through

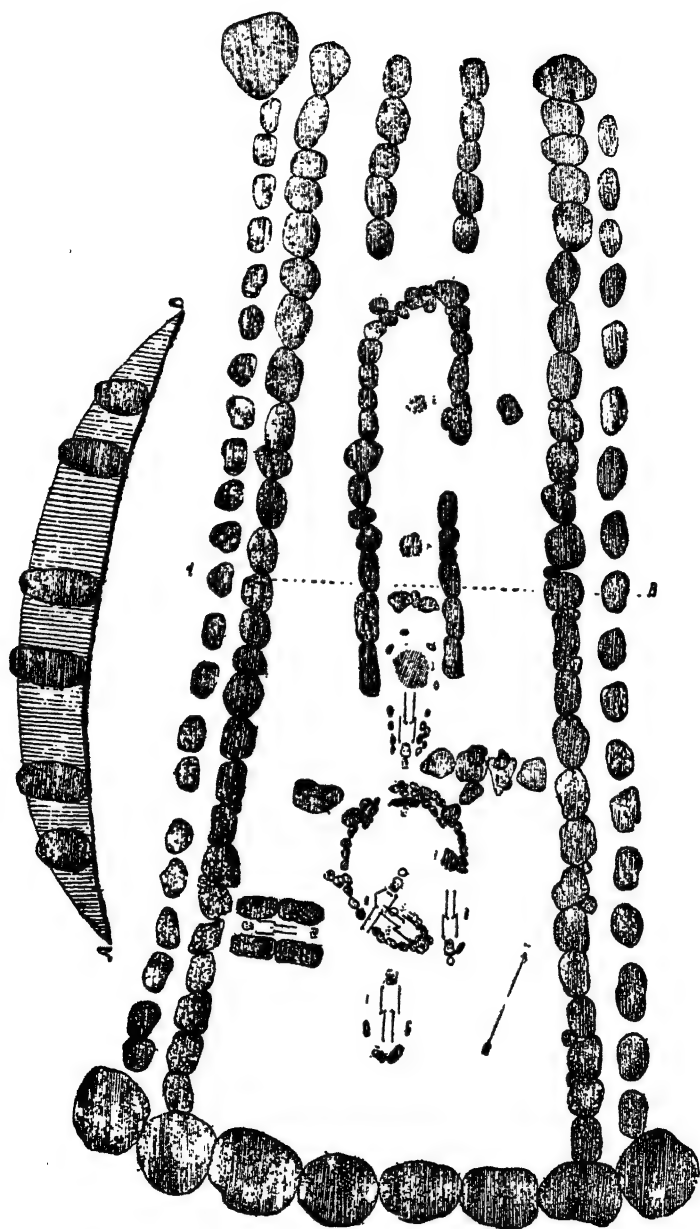


FIG. 95. Kujavish Grave, Swierczyn. After Kozłowski.

Galicia into Volhynia and Podolia. In Bohemia¹ Globular Amphoræ are sometimes found on hill-tops in fortified settlements, but even in Volhynia and Podolia they are normally found alone in characteristic slab-cists, subdivided and containing up to six skeletons.² Even the pottery from the cists, divided by porthole slabs, at Novosvobodnaya in the Kuban valley (p. 151) is reminiscent of the Globular Amphoræ.

Evidently these vases were made by swine breeders who roamed about in small groups far and wide, presumably mainly as hunters and swineherds, but doubtless engaging in casual robbery and trade. They were thus agents in the distribution of amber, Galician flint and even metal trinkets, but developed no specialized industries of their own that we can recognize. The nomads doubtless arose when some mesolithic group in the European plain came into contact with neolithic peoples, but the precise localization of their origin is uncertain; Central Germany, Galicia, and even the Pontic steppe have been suggested.

A grave at Kl. Rietz in Mark-Brandenburg³ contained a Globular Amphora and a vase of Danubian stroke-ornamented ware of a type, however, which is not earlier than the Jordansmühl phase of Danubian III. The latter period is accordingly an upper limit for Globular Amphoræ. In fact the culture they denote succeeds the First Northern in East Germany and Poland.⁴ On the other hand the Unétician metal work and Stone Cist types associated with our amphoræ in other graves show that the culture lasted into period IV.

We must accordingly imagine numbers of small groups, each distinguished by peculiarities in pottery and sometimes also in burial rites or equipment, wandering about the North European plain simultaneously. Especially in Central Germany groups adhering respectively to Walternienburg, Globular Amphoræ and Battle-axe traditions must have been not only contemporary but also in close spatial contact. And they must have encountered also Danubian peasants making stroke-ornamented ware and others making Jordansmühl pots to say

¹ Stocký, *La Bohême préhist.*, 128; *Proc. Amer. Philos. Soc.*, LXXI (1932), 380.

² *Zapiski Vse Ukraïnskogo arch. Komitetu* (Kiev), I (1931); *Antropologiya* (Kiev), II (1928); *Swiat.*, XVII (1936-7), 388.

³ Buttler, *Donauländische . . .*, 30, 64.

⁴ *Swiatowit*, XVII, 378, 420.

nothing of makers of collared flasks and miscellaneous megalith-builders. It is not surprising that such groups frequently interchanged ideas—perhaps they inter-married; the wonder is that they retained the individuality of their ceramic traditions so long. The number of distinct types of pottery tends to give a quite exaggerated idea of the density of population and the duration of Montelius' III. Actually the several kinds of vases must have been made by relatively small and nomadic groups, several of which must have been living side by side. It is only by trying to arrange all groups in a sequence, which may really be valid at one particular site, that Montelius' period III becomes inordinately inflated. But that it overlaps with Danubian IV may be once more demonstrated by the metal trinkets associated with Globular Amphoræ and Walternienburg vases.¹

MONTELIUS' IV: THE NORTHERN STONE CIST PERIOD

During the fourth period of the Northern Stone Age the sharp contrast between Megalith-builders and Battle-axe folk began to break down in Denmark and Southern Sweden. Though each party still retained its traditional burial practices, there is little difference between the furniture of the Long Stone Cists, collective tombs that carry on the megalithic tradition, and that of the Upper (Separate) Graves of the Battle-axe population. But it is the culture of the latter that is dominant.

The area of settlement remains unaltered but the population has perhaps increased: in Västergötland there are 4,266 relics belonging to Montelius' period IV, as against 3,106 from the preceding period.² These figures further indicate that the Stone Cist period can hardly have been shorter than that of the Passage Graves. But the general economy remained unaltered. The importance of agriculture may be inferred from the number of flint sickles, curved in imitation of metal models. But weapons are still the most prominent relics. The flint axes now regularly imitate metal axes with a splayed blade; but the faces are seldom polished; indeed polished flint axes made in Montelius' III were sometimes flaked all over for use in his

¹ Böhm, *Die ältere Bronzezeit in der Mark-Brandenburg*, 32.

² Forssander, *Ostskandinavische*, 162.

period IV. Battle-axes were still used, but are less shapely and less metallic. The classical weapon was the dagger, at first lanceolate in form but culminating before the end of the period in the famous fish-tailed form (Fig. 96).¹ The arrow-heads are hollow-based rather as in the Copper Age of Iberia.

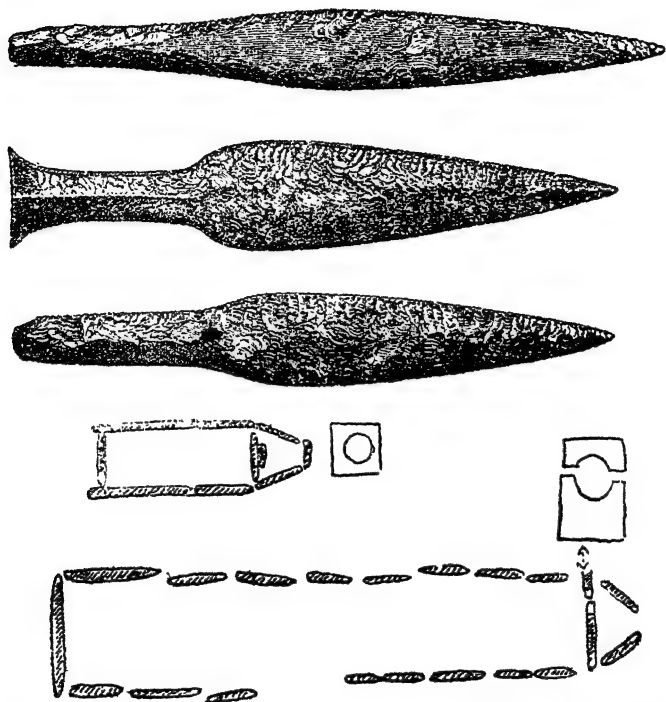


FIG. 96. Flint daggers (Denmark, $\frac{1}{2}$) and porthole cists (Sweden)—types of Montelius' IV.

The fish-tailed flint daggers certainly copy the bronze-hilted "Italian" daggers of Central Europe. The models for these and other weapons were indeed imported from time to time. A certain number of bronzes from Italy, Central Europe, and Britain have survived from this period, stray or in hoards. And before the period ended smiths may have been producing for a local market in Schleswig-Holstein and even Southern Sweden.² To obtain metal for rearmament the northerners

¹ Ibid., 118, fig. 23; Brøndsted, *Danmarks*, I, fig. 251.

² Forssander, 95 f., 166 ff.; Kersten, *Nordischen Bronzezeit*, 98.

had to rely chiefly on the export of amber. Every scrap of the precious gum was reserved for foreign trade, so it could no longer be used locally for charms. In the tombs the place of amber beads is taken by long pendants of slate, ring-pendants of stone or bone, and a few metal trinkets of Unëtician type.¹ But for all their sacrifices the Northerners' equipment and economy remained essentially neolithic throughout period IV.

The practice of collective burial persisted, alongside burial in separate graves in the mass of the barrow. But the passage grave gave place to the long stone cist or gallery grave generally sunk in the ground. These are not, as Montelius thought, the result of a degeneration of the passage grave.² One group might be treated as an evolution of the dolmen, but even so that evolution must have been inspired by new ideas from outside the Northern province. A group of Swedish cists, built of thin slabs and often subdivided by a porthole slab, must be derived from the Paris basin, presumably through the Westfalian group mentioned on p. 187. Even the splay-footed pot, characteristic of the French Horgen culture (p. 303), was reproduced in a variant in Sweden and Denmark.^{2a} These new ideas must have been introduced by immigrant families joining the established communities. But the normal pottery of the period is represented by flower-pot forms imitating wooden models and decorated with rouletted zig-zag ribbons (Fig. 85, bottom left) perhaps derived from the Oder Battle-axe culture.

Imitations of Unëtician pins and Unëtician gold ornaments associated with even the early flint daggers show that the fourth period of the Northern Stone Age did not even begin till the Early Bronze Age was well established in Central Europe and in Britain. Though metal-workers and traders were spreading northwards, the Northern Stone Age outlasted Danubian IV. In Denmark and Scandinavia the Bronze Age proper begins first in the Middle Bronze Age of Hungary and Britain.³ Till that date metal was too scarce for bronze weapons to be buried with even the richest chief. And one of the earlier graves furnished with products of the local Northern bronze industry (at Liesbüttel in Schleswig-Holstein)

¹ Nordmann, "Megalithic Culture," 44.

² Forssander, *Ostskandinavische*, 114, 140, 156; Brøndsted, *Danmarks*, 290. ^{2a} *As.A.*, XL (1938), 14.

³ Forssander, *Ostskandinavische*, 176, 196; Kersten, *Nordischen Bronzezeit*, 100.

contained an imported spear-head of a type characteristic of the Late Bronze Age in Britain.¹ If the Egyptian origin of the fayence beads imported into Wiltshire during the early Middle Bronze Age (p. 325) and the short chronology for Unětice be accepted, the Northern Stone Age must have lasted till after 1400 B.C.

THE CENTRAL GERMAN BRONZE AGE

Round the salt deposits and ore-lodes of the Saale and Elbe, on the other hand, an independent bronze industry had arisen when period IV of the Northern Stone Age was just beginning. Metal weapons had already been brought thither by Beaker-folk in Montelius' III. These may have begun to exploit the ores of Vogtland and exported their winnings as ingots in the form of the sacred double-axe.² For double-axes with a shaft-hole too small to take a real shaft are quite numerous in that region while stray specimens reached Switzerland and Central France. Subsequently Unětician farmers spread down the Elbe and Saale to the Hartz.³ Their poor graves contain a few Unětician ornaments (but not the oldest forms like knot-headed pins) though their pots preserved with provincial conservatism the pouched form that had gone out of fashion in Czechoslovakia after the first phase of Danubian IV. The Unětician tradition formed the basis of Central German metal-work. But it was fertilized by the importation of Britannico-Hibernian models from the west⁴ and perhaps by the immigration of Irish craftsmen. Trade connections with the north and east had already been established by makers of Globular Amphoræ. Conditions were thus created for the development of an industry blending Western with Southern traditions and adapted for supplying also a Northern market.

Capital for the industry's development was perhaps supplied by rich chieftains of the Saxo-Thuringian Battle-axe folk (p. 167), and these certainly became the principal purchasers of its products. Their rich burials under barrows present a striking contrast to the poor flat graves of the local Unětician farmers, and recall the royal graves of the Kuban. At

¹ *American Anthropologist*, XXXIX (1937), 13.

² *BSA.*, XXXVII, 144, 150-1.

³ *PZ.*, XX (1929), 128 f.

⁴ e.g. axes from Leubingen and Dieskau, *Arch.*, LXXXVI, 303.

Leubingen ¹ for instance an old man and a young girl had been interred in a lean-to chamber of oak beams enclosed by a circular fosse 20 m. in diameter, and furnished with bronze rounded-heeled daggers, gold pins and lock-rings of Unëtician types, a halberd derived from the Irish series, a massive gold bracelet, and a perforated stone axe (or ploughshare). Such burials illustrate the concentrated wealth of war-lords

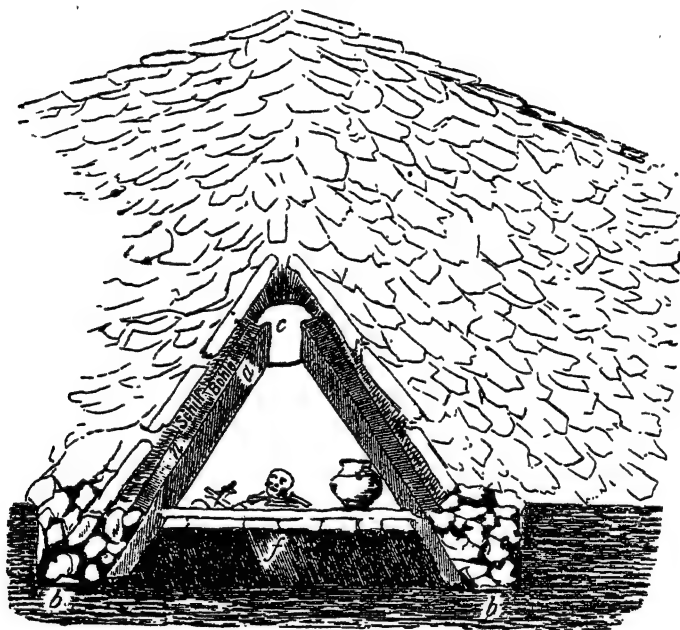


FIG. 97. Section of Leubingen barrow.

established among an Unëtician and Northern peasantry and taking toll on the trade in amber, salt, and ores that passed through their domains. A number of merchants' hoards of bronzes and amber beads show, however, that the chiefs failed to guarantee security to travellers and artisans.

These hoards and the grave goods illustrate how by blending varied foreign traditions in producing for their warlike patrons the local smiths had created a variety of

¹ *JST.*, V, 1-59; *Arch.*, LXXXVI (1936), 205; cf. also *JST.*, VI (Helmsdorf); I (Baalberg), and perhaps Kuttiau, Silesia (*Götze-Fest.*, 84-9), and Anderlingen, Hanover, *Jb. Prov. Mus. Hannover*, 1907-8, 242-4, and *Arch.*, LXXXVI, 225.

original types¹—halberds, modelled on late Irish types, but decorated with grooves and triangles and ultimately mounted on bronze shafts (Fig. 98, 1), curious narrow "double-axes", daggers with bronze hilt, cast in one piece with the blades either oval in imitation of Italian daggers like Fig. 58, or flat like the gold-studded Anglo-Armorican weapons.² Their products were exported to North Germany and across Poland to East Prussia.³ Thence and from Denmark came in exchange amber beads to be used in turn for barter with Bohemia, Hungary, and Italy.

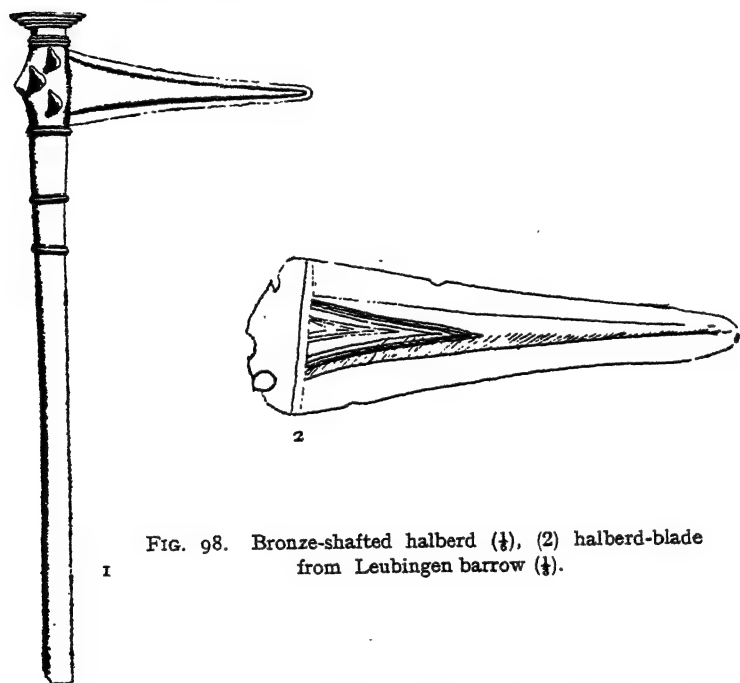


FIG. 98. Bronze-shafted halberd (1), (2) halberd-blade from Leubingen barrow (1).

Though formally "Early Bronze Age" the graves and hoards containing these products are relatively late. The English axes from the Leubingen barrow and from a hoard at Dieskau near Halle would belong to the transition from Early to Middle Bronze Age at least. The Irish models for the halberds

¹ Childe, *Danube*, 242-4.

² *Götze-Fest.*, 93, and *PZ.*, XVI, 205; cf. p. 310, below.

³ See for halberds ORIORDAIN'S map, *Arch.*, LXXXVI, 277, and for narrow double-axes, Sturm's *Die Bronzezeit im Ostbaltikum*, Berlin, 1936, 32.

are far from the beginning of the Hibernian series. One Central German halberd was found with a socketed axe.¹ In the Saale-Elbe region graves and hoards belonging typologically to the Middle Bronze Age are practically non-existent.² Hence the Central German Bronze Age belongs to the latter half of Danubian IV and lasts into V. This fact seems an adequate refutation of the recent claim that bronze-working originated in Central Germany and was spread thence to Anatolia and Mesopotamia! Central Germany about 1400 B.C. had just attained the status reached a century earlier on the Upper Elbe.

¹ *Mannus*, XIII (1923), 42-55.

² Childe, *Danube*, 313.

CHAPTER XI

THE END OF THE FOREST CULTURES

ON the great forested plain of Northern Eurasia bands of food-gatherers maintained the mesolithic economy so well adapted to the environment long after food-production had been established on the löss lands of Central Europe and in the Atlantic West. Nay, even after some or most societies on both sides of the North Sea and of the Baltic and even in Central Russia had adopted the new neolithic economy, groups of hunter-fishers still preserved a mode of life so congenial to their habitat and many of the tools for its exploitation as created in the Boreal phase. Since then, indeed, all had so far developed the fishing industry that on suitable coasts, rivers, or lakes they could become sufficiently sedentary to profit by the manufacture of pottery. In fact, on soils unfavourable to the conservation of bone, as in East Anglia and on the lower Rhine,¹ it is mainly their pots that enable modern archæologists to recognize these residual gatherers among their neolithic neighbours.

Everywhere these savage vessels reflect the underlying uniformity of economy and tradition in recurrent common traits despite real and not surprising local divergences. All the pots are built up by rings out of coarse clay and badly fired.² All could be described as ovoid in form. Pits arranged in horizontal zones universally form the foundation of the decoration. Nearly everywhere they are combined with the imprints of various stamps—a length of twisted “cord”, the edge of a shell, a notched pebble³ or bone comb, the articulation of a bird’s leg-bone—or stabs, again arranged as a rule, horizontally.

The productive equipment of all groups is equally uniform, being derived from the Maglemosean, least altered where the effects of climatic change since Boreal times had been least—east of the Baltic. So for woodwork antler chisels (A, K, L, N)⁴

¹ *Germania*, XXII (1938), 71-9.

² Vojevodskii’s admirable study of the ceramic technique in Central Russia (*S.A.*, I, 51-78), applies to the whole series.

³ Several of these implements have been found on Russian stations.

⁴ Letters refer to the sites illustrative of the distribution of the types and listed at the end of the chapter.

and perforated adzes (A, M), and even socketed bone chisels (F) were still used from Norway to Central Russia and the Ukraine. But in Scandinavia, Finland, and the Western Soviet Republics such were increasingly translated into polished stone; on the sandy soil selected for occupation in Central Russia this improvement in wood-working equipment was postponed till the Fatyanovo farmers required heavily timbered land for gardens or pastures. Similarly the boar's tusk knife¹ survived

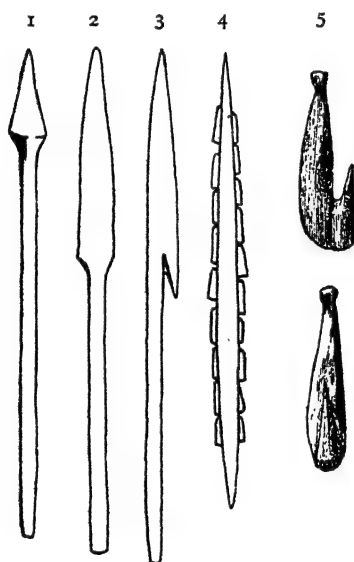


FIG. 99. Eastern Maglemosean types $\frac{1}{2}$: 1-4, Esthonia after Clark; 5, Ukraine.

in Norway, Sweden, and Central Russia (N), but in the north it was often translated into slate, producing forms like Fig. 100, 1.

The Maglemoseans having already developed an efficient hunting and fishing equipment, this persisted everywhere with few modifications or additions. Slotted bone points and harpoons or leister-prongs are almost universal from the Atlantic to the Urals and far into Siberia. East of the Baltic points like 99, 3² (H, K, Q) and conical arrow-heads (K,

¹ *Fv.*, 1924, 298, and N., near Moscow.

² *Eesti Rahvi Muuseumi Aastaraamat*, Tartu, VII (1931), 64.

L, P, Q, R)¹ extend as far. The curious fish-hooks of Fig. 99, 5 of the Boreal Pernau type survived in the Sub-Boreal in North Russia and the Ukraine (K, M). But composite fish-hooks with a notched sinker of stone or bone and a separate barb made of wood or bone² later appear from Norway to Siberia. On the other hand the growing importance of net-fishing since Boreal times is indicated by the numbers of sinkers from the dwelling-places and net imprints on pots.³ For dispatching game rhomboid club-heads (Fig. 100, 4), perforated by percus-

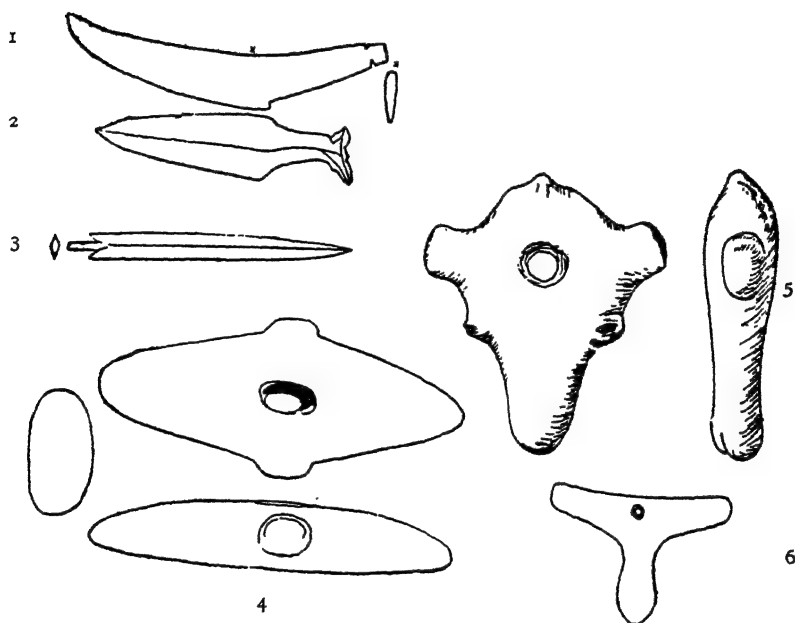


FIG. 100. Slate knives and dart-head, Sweden (1), stone mace-heads, Finland (2), and slate pendant (3).

sion and presumably derived from the Maglemosean spiked stone weapons, were utilized from Norway to the Urals and the Lower Volga.⁴ Everywhere the huntsmen were assisted by dogs though in Central Russia these might have to be fed on fish.⁵

¹ Indreko in *Sitzbercht. Gelehrter Estnis. Gesell.*, 1934; *IGAIMK.*, 106 (1935), 185.

² *SA.*, III, 101; V., 44.

³ *IGAIMK.*, 106, pp. 118, 137.

⁴ *Real.*, IX, pl. 46; Ailio, *Wohnplatzfunde*, 29, 33; *SGAIMK.*, 1931, No. 6, p. 7, found with a contracted skeleton in an ochre grave.

⁵ *IGAIMK.*, 106, p. 125.

Each little group of hunter-fishers could be self-sufficing, but this economic independence did not exclude interchanges of goods and materials. Indeed the seasonal hunting trips imposed by their predatory economy fitted the Forest folk

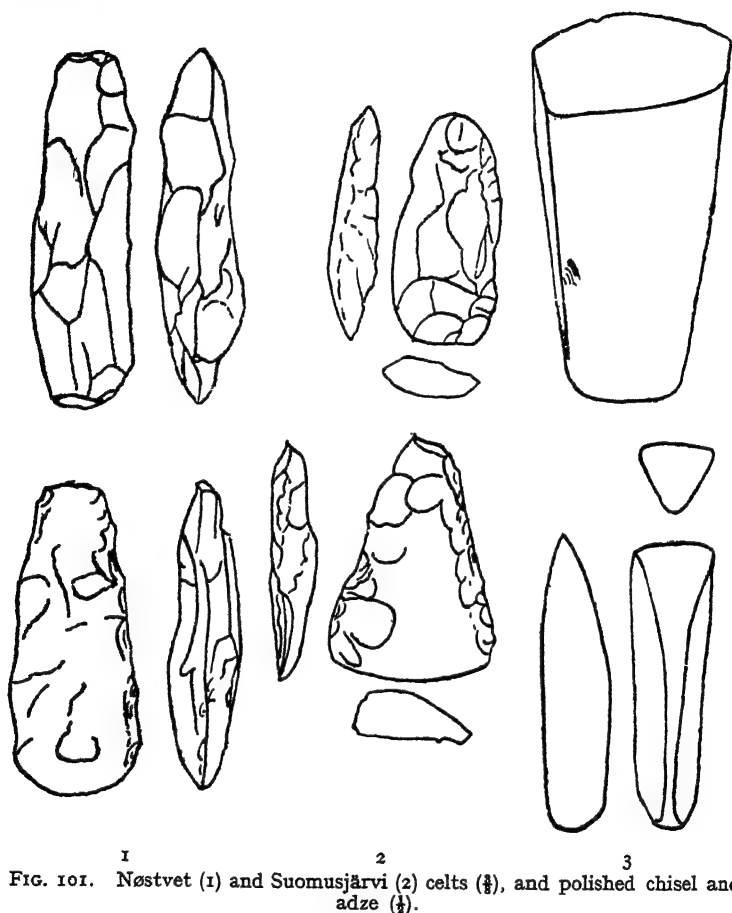


FIG. 101. Nøstvet (1) and Suomusjärvi (2) celts ($\frac{1}{2}$), and polished chisel and adze ($\frac{1}{2}$).

for the role of traders too when, as in Britain (p. 323), a growing social surplus made a Bronze Age economy possible. Even in the poor North where that was delayed, widespread if sporadic exchanges took place. Russian flint was first imported into Finland, but was later ousted by Scandinavian flint.¹

¹ *Acta Arch.*, I, 210.

Chisels like Fig. 101, 3 are proper to Finland and North Russia but were traded to Sweden.¹ A sledge runner made of *Pinus cembra* that does not grow west of the Urals was dug up from a Finnish peat.² The Forest folk had discovered the amber of East Prussia and carved it in their own naturalistic style and exported it to Norway, Central Germany, Finland, and Central Russia.³ To accelerate transport over the northern snows sledges had been available since Boreal times and in the Sub-Boreal skis too had been invented.⁴

The ideological superstructure reared on this uniform mode of production was hardly less uniform in so far as it has left any trace in the archæological record. So the dead were buried extended in the settlements as in Ertebølle times or in cemeteries both in Scandinavia and beyond the Baltic, and often accompanied by lumps of red ochre or even sprinkled with this colouring matter (E, H, K, L). The size of the cemeteries indicates substantial groups living together or prolonged occupation of the same site. One on Gotland⁵ comprised forty-nine graves, that on Oleniï Ostrovo in L. Onega⁶ no less than 150. In the latter cemetery five bodies had been interred standing erect in deep pits. Being accompanied by an unusual profusion of ornate hunting implements and ornaments, the persons thus interred were presumably "chiefs"—a surprising indication of distinctions of rank in societies usually supposed to be still in the stage of primitive communism! In Central Russia some of the skulls are said to be already "Laponoid".⁷

In Norway⁸ elks and reindeer were engraved on the rock in a style as naturalistic as the Magdalenian. In Sweden and North Russia⁹ these and other figures were pecked out on smooth rock-surfaces in a more conventional manner. In Finland and North Russia (L), female figurines were occasionally modelled in clay while animals were carved naturalistically

¹ *Real.*, VI, 222.

² *Festschrift P.W. Schmidt*, Vienna, 1928, 949.

³ Brøgger, *Den arktiske Stenålder*, 185; *Real.*, I, 436; *SMYA.*, XXXII, 20; *IGAIMK.*, 106, p. 132.

⁴ *SM.*, XXXVIII-IX (1931-2), 51; *FM.*, XLI, 1 ff.

⁵ *Acta Arch.*, X (1939), 61 ff.

⁶ *SA.*, VI (1940), 46-62.

⁷ *SA.*, III, 217-220.

⁸ Bøe, *Felsenzeichnungen in Westlichen Norwegen*, Bergen, 1932.

⁹ Ravdonikas, *Les Gravures rupestres des bords du lac Onega et de la Mer Blanche*, Akad. Nauk SSR., *Trudy Instit. Etnografii*, 1936, 1938.

in wood, amber, stone, or flint.¹ Incidentally, the hunter-fishers in Finland² already chewed gum!

Within the general uniformity the self-sufficiency of local groups encouraged gradual divergences in culture, most conspicuous in the pottery. In England the favourite bowls are relatively shallow, but possess a concave neck. In Scandinavia the same feature recurs in deeper ovoid vessels. East of the Baltic the profile curve is not normally thus interrupted, but in Central Russia the rims may be squashed down as also in England. In each major ceramic group changes in fashions of ornamentation afford a better chronological index than the typology of stone and bone artifacts. In Finland such changes can be connected with the gradual regression of the Littorina

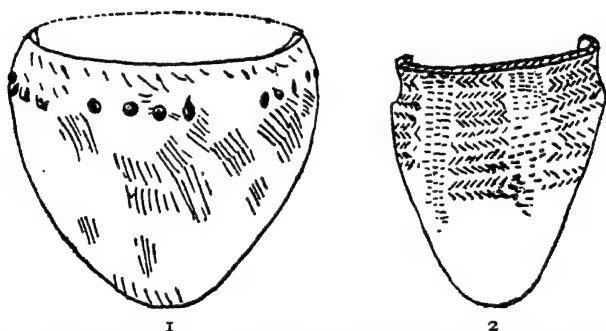


FIG. 102. Pitted ware from Central Russia and vase of East Swedish style from Åland Islands (†).

Sea from its maximal extension, the so-called *Clipeus limit*. The oldest vases—style I—lie between strands representing 87 per cent to 76 per cent of the maximum extension, and are decorated, in addition to the inevitable pits, largely with whipped cord imprints, partly arranged vertically. In style II, represented on camp sites lying between 75 per cent and 68 per cent of the limit, comb-impressions arranged in horizontal bands alternate with rows of pits while in style III, found still lower, down to the 64 per cent strand, the comb imprints form rectilinear patterns instead of simple bands.

Unfortunately the well-established Finnish sequence is not easily applicable to other parts of the province. Despite the general similarity of Central Russian pottery to the Finnish

¹ Round the White Sea, *SA.*, IV, 180.

² *FM.*, XXXVIII-IX, 64.

only some sherds from Yazikovo are really parallel to style I, while the material from Lyalovo near Moscow might be a counterpart to II. Analogues to style III are commoner but mixed with local variants such as the honey-comb ware in which the whole vase surface is covered with rows of pits without comb imprints. On the other hand to the south in the Ukraine maggots and other motives made with twisted cords enjoyed a wider and longer popularity.

Such were the backgrounds against which the first farming communities successively appeared as described in Chapters IX and X. In Denmark they had appeared already in early Sub-Boreal times, yet groups of Ertebølle gatherers preserved their old culture till Montelius IIIb; the reputedly archaic shell-mound of Brabrand Sjø (Jutland) turns out to be contemporary with the farmers' houses at Troldebjerg (p. 185)¹; in eastern Scania settlements of farmers using corded ware alternated with those of gatherers preserving Ertebølle traditions.² The last-comer's pit-ornamented ovoid pots show megalithic influence and though their economy was still based on gathering, a few pig bones suggest a tentative adoption of stockbreeding. Assimilation of the neolithic economy is more marked at Alvastra in Öster-Götland,³ where barley was cultivated and cattle bred.

In Finland the Boat-axe graves of the first food-producers should correspond to dwellings lying between 60 per cent and 50 per cent of the *Clipeus maximum*, but the old gathering economy prevailed much later too on settlements between 50 per cent and 40 per cent of that limit. On them, however, the pots often contain asbestos temper and are decorated with cord or textile impressions as well as the traditional pits while socketed celts of bronze of the Swedish Malar and the East Russian Ananino⁴ types proclaim the late absolute date of their occupation. Similarly in Central Russia the stockbreeding and cultivation of the Fatyanovo warriors did not altogether supersede the gathering economy, particularly north of the Volga. There, camp sites with textile pottery

¹ *Dansk. Geolog. Undersøgelse*, IV. Række, Bd. 2, No. 16 (1937), and *Nord. Fortidsminder*, III, 37, n. 5.

² Bagge and Kjellmark, 244. *Stenåldersboplatserna vid Siretorp*, 244.

³ *Mannus*, II, 120 ff.

⁴ Tallgren, *ESA.*, XI, 16-30; Childe, *Man.*, 1943, No. 2, p. 8; *KS.*, IX, 39-42.

illustrate the survival of "Stone Age" hunter-fishers at a time when socketed axes and other metal types represented in the Seima hoard (Fig. 103) were filtering in from the south-east and even when Malar and Ananino celts were being traded across Central Russia between Norway and the Urals.

The realistic elk's head forming the handle of one copper knife from the Seima hoard (Fig. 103, 3) betrays the naturalistic style proper to hunters and indeed reproduces exactly some stone battle-axes that have turned up from Norway to the Urals, and a bone dagger-handle from Oleniï Ostrovo.¹ Such belated survivals of a Stone Age lie outside the scope of this book. The poor North simply could not yield

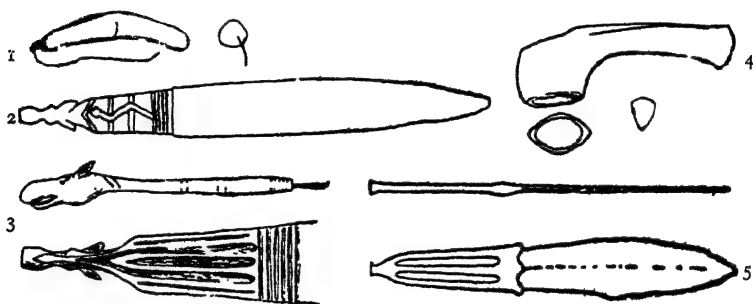


FIG. 103. Knives and axe from Seima hoard : 1, ($\frac{1}{2}$) ; 2, ($\frac{1}{2}$) ; 3 (detail of 2), $\frac{1}{2}$; 4-5, $\frac{1}{2}$.

a surplus on which a Bronze Age economy could be based. On the other hand survivals of gatherers side by side with food-producers in the Neolithic and even the earlier Bronze Ages of Sweden, Denmark, the Rhineland, and England, must be reckoned with in the prehistory of those regions.

¹ Clark, *Northern Europe*, 186, and fig. 58 ; *SM.*, XXXV (1928), 36-43.

LIST OF SITES :

- A. Norway, "Vistefindet," Stavanger Museums, *Arsheft*, 1907.
- B. Norway, Vig, Gjessing, *Rogalands Stenålder*, 93.
- C. Norway, Ruskeneset, near Bergen.
- E. Gotland, Nihlen, "Gotlands Stenåldersbopladsen" (K. Vit. Hist. o Antikv. Akademiens *Handlingar*, 36, 3. Stockholm, 1937).
- F. East Prussia, *Real.*, IX, pl. 206 ; XIV, 510 ff.
- G. Latvia, Balodis, *Det äldsta Lettland*, Uppsala, 1940.
- H. Talgren, *Zur Archäologie Eestis, Acta et Comment. Univ. Dorpat.*, B, III, 1922 ; Moora *Die Vorzeit Estlands*, Tartu, 1932.

- J. Finnland, Ailio, *Steinzeitliche Wohnplatzfunde in F.*, Helsinki, 1909 ;
cf. *PZ.*, V, 517.
- K. N. Russia, Veretye on L. Lacha ; *TGIM.*, XII (1941), 21-70.
- L. N. Russia, Kubenino on R. Onega ; *SA.*, V (1940), 36-45.
- M. Ukraine, Pohorilova on Desna ; *Antropologiya*, IV (Kiev, 1930), 175.
- N. Lyalovo, near Moscow ; *RAZ.*, XIV (1925), 37-82.
- P. Volosovo, Upper Volga,
- Q. Ls. Sigir and Ayatskoe in Urals ; *FM.*, XXIII (1916), 12 ; *IGAIMK.*,
106, pp. 200.
- R. N. Russia, Oleniĭ Ostrovo, L. Onega ; *SA.*, VI (1940), 46-61.
- S. C. Russia, Yazikovo, near Kalinin ; *SA.*, III (1937), 218.

CHAPTER XII

MEGALITH BUILDERS AND BEAKER FOLK

MEGALITH TOMBS

THE diffusion of Oriental culture in Western Europe must have been effected in part by maritime intercourse. And evidence of such intercourse is supposedly afforded by the architecture of groups of tombs spread significantly along the coasts of the Mediterranean and the Atlantic and along terrestrial routes joining these coasts. Judged by their contents, the tombs in question do not belong to a single culture and were not therefore erected and used by a single people. But architectural details recur with such regularity at so many distant places that a general survey of the main types at this stage will save repetition.

The most intriguing tombs of the series, which consequently received the first attention from archæologists, are built of extravagantly large stones. They are therefore termed "megalithic". But as the same plans are followed in tombs built in dry masonry with small stones and in others excavated in the ground (*rock-cut tombs*) the application of the term to the whole series is misleading. In Portugal,¹ for instance, beehive chambers entered through a low, narrow passage were excavated in hillsides where the soft limestone facilitated digging. Where the subsoil was shallow and the rock hard, the same plan was reproduced above ground in dry-stone masonry roofed by corbelling if the local sandstone or schists broke naturally into convenient slabs. Where the rock is more refractory, like granite, large blocks set on end, *orthostats*, supporting large capstones or lintels form the framework for chamber and passage. And tombs constructed by all three methods often contain the same furniture.

Many authorities,² therefore contend that in such regions the method of construction is conditioned by local geology

¹ V. Correia, "El Neolítico de Pavia," *Mem. CIPP.*, XXVII (1921), 63 f.; cf. Forde, *Am. Anthr.*, XXXII (1930), 41.

² Elliot Smith, "The Evolution of the Rock-cut Tomb and Dolmen," in *Essays and Studies presented to Sir William Ridgeway*, Cambridge, 1913, was a pioneer in this interpretation.

alone. That thesis will be adopted in the sequel with the reservation that it is not universally applicable. "Rock-cut" tombs could easily have been excavated in the chalk of the English Downs, but in fact the burial chambers here were always built above ground. At Antequera and other cemeteries in Southern Spain (p. 267), orthostatic and corbelled tombs—of different plans—stand side by side. In such instances the method of construction must have been dictated exclusively by the traditional prejudices of the tombs' builders. In a preliminary survey, however, it is community of plan that is most significant.

Among a bewildering variety of local deviations it is convenient to distinguish two main types—*Passage Graves* consisting of a chamber entered by a distinct passage, lower and narrower than the chamber proper; and *Long Cists* (*Gallery Graves*) in which the chamber itself is long and narrow and entered directly through a portal without any preceding passage. But if this conventional distinction be rigidly maintained, it leads to quite arbitrary classifications. A tomb like Fig. 149 is on plan as much a Gallery Grave as Fig. 105, but by its furniture and method of construction it belongs to the same group as Fig. 148. Long Cists may be covered by long or round barrows and so may Passage Graves. No complex of relics is peculiar to one type rather than the other save that the SOM. culture (p. 302) is regularly associated with Long Cists of the Paris type. Hence even in Western Europe the facts do not authorize us to postulate the diffusion of two distinct versions of the "megalthic idea".¹

The Passage Grave is the most widely distributed type being common throughout the East Mediterranean area, in Sicily, Sardinia, Southern Spain, Portugal, Brittany, Central Ireland, Northern Scotland, Denmark, South Sweden, and Holland. Cellular annexes open off the main chamber in the rock-hewn tombs of the East Mediterranean, Sardinia, and the Balearic Islands and in some corbelled tombs in Southern Spain, Portugal, Ireland, and Scotland, in a few orthostatic tombs in Brittany and Denmark. Roughly circular chambers characterize the corbelled tombs of Crete and the Cyclades, the earlier rock-hewn tombs of Sicily, and many South Spanish, Portuguese, Breton, Irish, and Scottish sepultures and the oldest

¹ Cf. Daniel, *PPS.*, VII (1941), 1-49.

Danish ones. A corbelled passage grave of circular plan is often called a *tholos* (Figs. 39 and 104).

In rock-cut tombs the passage is often a descending ramp. Where the ground surface is nearly level it may be reduced to a stepped shaft, producing the pit-cave (Fig. 25, 2) already encountered in Greece and South Russia and to meet us again in Sicily. If the chamber is cut in the face of a cliff, the passage may be abbreviated to a mere doorway as often in Sicily (Fig. 104). A well-marked variety of passage grave, built with large orthostats, has been termed an undifferentiated passage grave because the passage gradually expands towards the

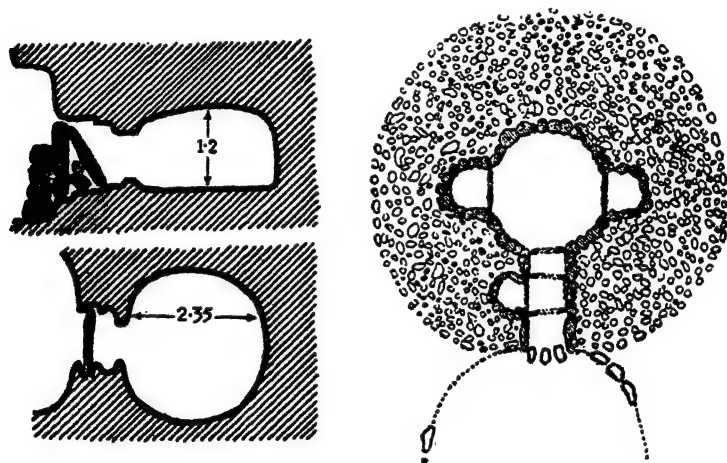


FIG. 104. Silucan I rock-cut tomb, Castelluccio, and corbelled tomb, Los Millares.

chamber which is generally bottle-shaped. Notably in the Balearic Isles the rock-hewn chambers are themselves long and narrow and not preceded by any length of passage though cellular annexes sometimes open off the chamber (Fig. 105). In Menorca the same type is reproduced above ground in dry stone masonry in so-called *navetas*.

The *long stone cist* or *gallery grave* reproduces this Balearic plan in orthostatic masonry. In Sardinia the orthostats support dry stone walling corbelled in to a barrel vault. But in the classic form represented in the Paris basin, Brittany and Jersey, Belgium, Western and Central Germany, and Sweden the uprights support the lintels, and the long narrow rectangular

chamber is preceded by a short porch as wide as the chamber. Most cists of the Paris type are subterranean, being built in an excavated trench. Variants on long cist occur in South Italy, Sardinia, Northern Spain, France, Britain, Denmark, and Holland. On the slopes of the Pyrenees, in Northern Ireland and South-West Scotland, gallery graves are divided into a series of intercommunicating compartments by low, transverse slabs, termed *septal stones*, sometimes combined with upright portals; such tombs are known as *segmented cists* (Fig. 106, 1).

Dolmen is a term applied sometimes to any megalithic tomb, but generally only to small rectangular or polygonal chambers without entrance passage, formed of three to six megalithic uprights. Even when thus restricted the name obscures the genetic and functional variety of the monuments to which it is applied. Some "dolmens", for instance in Sardinia¹ and in the Cotswolds,² appear to be just the most stubborn remains of more complex monuments destroyed by cultivators or road-builders. Some are closed chambers, not collective tombs. Others are obviously just abbreviated gallery-graves.³ To avoid confusion we have used the Danish name *dyss* (plural *dysser*) for dolmens which are marked by furniture as well as structure as a distinct type. But even the classical *dyss*, as defined on p. 179, might be regarded as a segmented cist abbreviated to one compartment only.

The portal of the tomb was treated with special care and one form—termed the porthole slab—must be mentioned here. A round or sub-rectangular aperture, 45 to 80 cm. (1 ft. 3 in. to 1 ft. 7 in.) across is cut out in a slab—or in the proximal edges of two juxtaposed slabs—which closes the entrance to chamber or passage (Figs. 78 and 96). Porthole slabs were a regular feature in Caucasian "dolmens" and occur even in the Indian ones. They form the portals to Siculan I megalithic cists, to the gallery graves of Sardinia, to corbelled and other passage graves in Southern Spain,⁴ to long cists of the Paris type not only in the Seine valley, but also in Brittany, and Jersey, Central Germany, and Sweden; they were even incorporated in

¹ *Antiquity*, XIII, 376.

² Crawford, *Long Barrows of the Cotswolds*, 21; Daniel, *Antiquity*, XI (1937), 183-200.

³ For instance Adam's Grave near Dunoon is just a segmented cist reduced to a single segment.

⁴ *Marburger Studien*, I (1938), 147-155.

the megalithic temples of Malta.¹ A porthole stone often enhances the resemblance of a built tomb's doorway to the

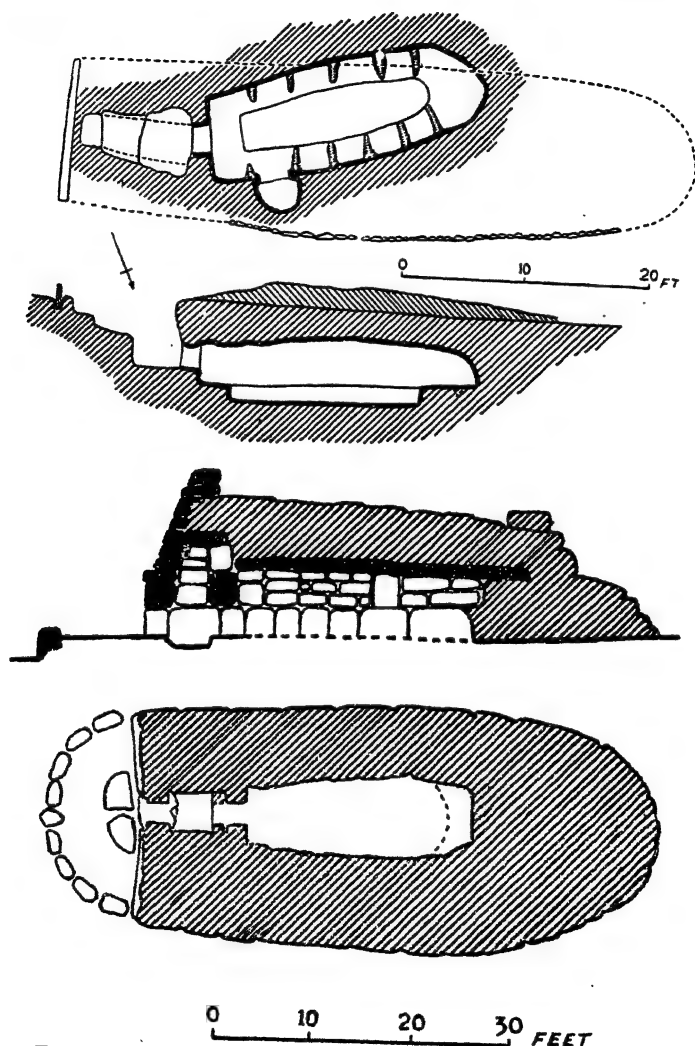


FIG. 105. Rock-cut tomb, Mallorca, and naveta, Menorca.

entry into a natural or artificial cave. The desire to emphasize the similarity has in fact been suggested as an explanation for the porthole stone's origin.² But a porthole slab was

¹ *Arch.*, LXVIII, 266.

² Kendrick, *Axe Age*, 48.

employed to form the portal of a Siculan I tomb, cut in friable rock at Monte Salia,¹ and the device does not always simulate a cave mouth at all realistically.

Built chamber tombs, when not erected in an artificial excavation, were probably always put underground artificially by burial in a mound or cairn. The latter was always carefully constructed and was often, if not always, supported by a built masonry revetment wall, or by a peristalith of large uprights. Masonry revetments are well illustrated in the Balearic *navetas*, in some Almerian round cairns, and in the long cairns of the Cotswolds and Northern Scotland. But it is doubtful whether these finely built walls were intended to be seen in Britain since the faces were masked deliberately by an "extra revetment"² of slabs piled obliquely.

The passage or portal of a chamber tomb often gives on to a forecourt so carefully planned that it must have played an essential part in funerary ritual. Semicircular forecourts cut in the rock precede some Siculan tombs, and are delimited by built walls in front of Sardinian gallery graves and North Scottish passage graves and by orthostats in front of tholoi at Los Millares in Almeria and Barro in Portugal and of North Irish and South-West Scottish segmented cists³ (Figs. 104 and 106). In England the forecourts are more often cuspidal in plan as are those connected with one or two Mycenæan, Danish, Swedish, and Armorican passage graves.⁴ More careful examination of the environs of chamber tombs or of the barrows covering them will certainly reveal the presence of forecourts in other regions. Despite their careful construction, the forecourts in Great Britain are generally found filled up with earth and rubble. This filling may be deliberate. In any case the entrances to tombs have usually been intentionally blocked up and hidden. That need not mean, as Hemp⁵ has inferred, that the numerous skeletons found in such tombs had all been laid to rest simultaneously after which the vault was finally sealed up. The initiated could always rediscover the

¹ *BP.*, XLIII, 17, fig. 6.

² *Arch.*, LXXXVI, 132; *PPS.*, IV (1938), 201.

³ *BP.*, XVIII, 75; *Ausonia*, I, 7; *Not Sc.*, 1920, 304; Correia, "Pavia," 72; Childe, *Prehistory of Scotland*, 26, 33. Vestiges of such a forecourt can be seen in Balearic *navetas* (*CIPMO.*, 26), and with timber revetment in English unchambered long-barrows (p. 318, below).

⁴ Nordmann, *Megalithic*, figs. 36-9.

⁵ *Arch. Camb.*, 1927, 13, 17.

entrance and remove the blocking as happened at Mycenæ (p. 78). Irrefutable evidence of the use of tombs for successive interments is forthcoming from one or two graves in Scotland, Brittany and Denmark,¹ as at Mycenæ.

The distribution of chamber tombs is presumably due to the spread of some religious idea expressed in funerary ritual. Save in Egypt they seem everywhere to have served as collective sepulchres or family vaults. A family likeness between the skeletons buried in the same tomb has been reported in England and Denmark² as at Mycenæ, and the features noted in Crete (p. 23: fires kindled in the chamber, confusion of bones) are repeated almost universally. Collective burial alone can hardly represent the unifying idea since collective burial in

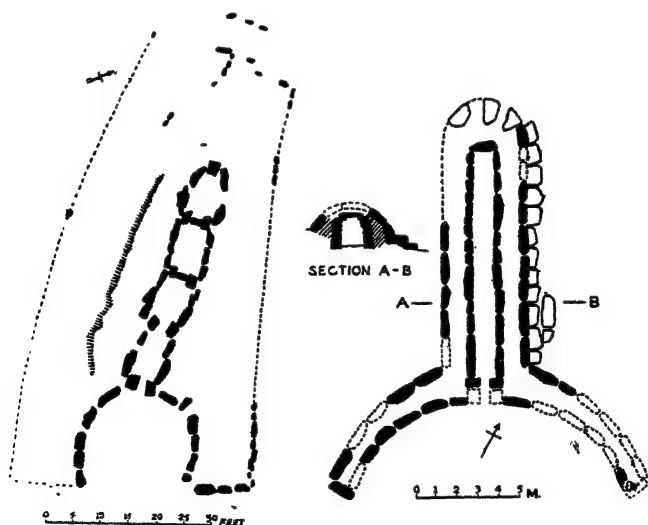


FIG. 106. Segmented cist in horned cairn, North Ireland, and Giants' Tomb, Sardinia.

natural caves was practised particularly in Sicily and South-Western Europe, perhaps even in pre-megalithic times. It has indeed been suggested that the tombs were just copies of cave ossuaries,³ and Wheeler⁴ describes the erection of megalithic

tombs as " the mass production of artificial caves " by populations accustomed to collective burial in natural ones. But in Scotland and elsewhere perfectly good natural caves were neglected. Collective burial comes in simultaneously with megalithic sepulchral architecture. But megalithic tombs were not always used as communal ossuaries. The finest *tholoi*, the Mycenæan, were designed for a single chieftain and perhaps his spouse. The most elaborate rock-cut tombs of the Marne contain only a few skeletons, the rest a hundred or so. Moreover burial practices were far from uniform. While inhumation, generally in the contracted attitude, was everywhere the normal practice, cases of cremation have been reported from many South Spanish, South French, Armorican, and British tombs and are conclusively attested in Northern Ireland.¹

It is in fact only detailed agreements in seemingly arbitrary peculiarities of plan and in accessories, such as porthole slabs and forecourts, that justify the interpretation of megalithic tombs as evidences of the diffusion of ideas. The grave goods afford little support for this interpretation. They are characterized at first by purely local idiosyncrasies and would suggest to the typologist differences in date. In Egypt, Cyprus, and the Ægean even the earliest tombs contain a relative abundance of metal objects, and such are not uncommon even in the first Siculan and Sardinian vaults. Moreover in all these regions chamber tombs continued to be built and used even in the Iron Age. In the Iberian Peninsula (save in remote corners) and South France too, despite numerous stone tools, the grave goods are explicitly Copper Age, but during the Bronze Age collective burial in chamber tombs went out of fashion. In Brittany metal is exceptional in chamber tombs. In Great Britain and the rest of North-Western Europe such tombs contain an exclusively neolithic furniture and in general went out of use as bronze became available.

This disparity has been used to support the thesis that megalithic tombs, invented in the extreme north or in a remote corner of Portugal in a fabulously ancient Stone Age, were carried thence to reach South Spain in the Copper Age and the Ægean in a still later Bronze Age. In reality the quantity of metal from the tombs is an inverse function of their distance from the natural centres of metal-working and from the channels

¹ Pp. 307, 316, below.

along which metal was distributed. In North Europe we have proved conclusively that at least the later "Stone Age" passage graves and long cists were in use during the full Bronze Age or Danubian period IV in Central Europe and that none of the dysser even need be appreciably older than period III. On the short chronology outlined on p. 122 megalith building in Denmark should begin about 2500 B.C., or several centuries later than the Early Minoan and Cycladic tombs, to say nothing of the Egyptian.

The extreme rarity of metal and indeed of other imported objects in the megalithic tombs of Northern and North-Western Europe, seems an almost fatal objection to the theory that the idea of building such tombs was diffused by "prospectors" or "Children of the Sun"¹ setting out from Egypt or some other East Mediterranean centre to settle in regions where ores or precious stones, valued for magical qualities as givers of life, were to be found. There is a general, but far from exact, correlation between the distribution of such substances (for instance, copper in the Iberian Peninsula, the Pyrenees, Sardinia, Ireland, Galloway and the Crinan district, tin in Galicia and Cornwall, gold in Brittany, Ireland, and the Strath of Kildonan, pearls in Orkney, amber in Jutland, etc.) and foci of megalithic architecture. The tomb furnishings afford surprisingly little evidence for the exploitation of these resources (no Scottish copper, gold, or pearls have been found in a local megalith) and none whatever of Egyptian or Ægean imports obtained in exchange for their exportation. Yet such products would be expected in the graves of merchant princes enjoying such prestige that they could persuade local savages laboriously, if rather barbarously, to copy for them the sepultures appropriate to their rank at home, and inspired also with the desire for securing their own immortality by necklaces of pearls and gold beads.

The rarity or complete absence of imports from megalithic tombs is furthermore a serious obstacle to their correlation with any independent sequence of cultures by which their relative or absolute age might be determined. Once in Sicily, very frequently in Sardinia, the Iberian Peninsula, South France and Brittany, occasionally in Scotland and even Denmark Bell-beakers or their derivatives are found in megalithic tombs

¹ Perry, *The Growth of Civilization*.

of almost every form. From individual tombs in Brittany, Spain, Scotland and Denmark¹ it has been proved conclusively that the Beakers were associated only with the later interments in the tombs concerned. The Beaker folk cannot therefore have been the vehicles in the original diffusion of the "megalithic idea", nor can their expansion, which reached the Danube basin late in period III, fix the relative age of the earlier chamber tombs.

Gallery graves in Central France, Brittany, and Jersey and even in the Balearic Islands and Southern Sweden regularly contain relics of the Horgen culture (p. 302). Indeed it may be said that Horgen folk diffused the Paris type of long cist to Brittany and across Germany to Sweden. In Central Europe the Horgen culture too seems to belong to a late phase of period III, and lasts into IV. But megalithic tombs are not attached to the best-dated Horgen settlements, and the long cist may be a secondary accretion in their culture.

In default of better founded chronologies, a resort to typology is tempting. In Scandinavia the sequence, dyss (dolmen), passage grave, long stone cist really seems to hold good, though it is no longer regarded, as it was by Montelius, as a self-contained process of evolution and degeneration. Similar sequences have been applied by Leeds, Obermaier, and Bosch-Gimpera² to the Iberian Peninsula, and by Mackenzie to Sardinia.³ Bosch-Gimpera, by labelling some ruinous tombs in Northern Portugal "dolmens", traces their development into orthostatic passage graves, rock-cut tombs, and lastly tholoi. But his "dolmens" being just ruins are distinguished by the extreme paucity rather than the archaism of their furniture. So we here prefer Forde's⁴ better documented thesis that the "small passage dolmens have a poorer, but not earlier furniture and represent a provincial degradation typical of peripheral areas". Nowhere outside Denmark is the priority in time of the typologically simpler tombs proved either by distribution or by grave goods. And even in Denmark out of hundreds of dysser only 57 are dated by

¹ *L'Anthr.*, XLIII (1933), 248; Childe, *Scotland*, 43; Nordmann, *Megalithic*, 122; Leisner, *Megalithgraber*, 554.

² *Arch.*, LXX, 215 ff.; "El Dolmen de Matarubilla" (*CIPP.*, 26); *Real.*, X, 358; *Rev. Anthr.*, XL (1930), 244 ff.; *Préhistoire*, II (1933), 189 f.

³ *BSR.*, V (1910), 87-137; VI, 127-170.

⁴ *Am. Anthr.*, XXXII, 16.

their contents to Montelius' II; a very large proportion must have been built, like the passage graves, during Montellus' III.¹

No new typology need be attempted here. The architectural agreements cited reveal the megalithic province as a cultural continuum. Within that continuum culture grows in every aspect poorer as we pass westward and northward from the East Mediterranean to Scotland and Denmark. We see the same sort of cultural zoning that has been disclosed in the Danubian corridor and on the Eurasiatic plain.

BEAKER TRADERS

The Beaker folk was a principal agency in opening up communications, establishing commercial relations, and diffusing the practice of metallurgy. We have already mentioned their activities in Central Europe, and they will meet us so frequently in the West that a brief characterization becomes convenient at this point.

Beaker folk can be recognized not only by their economic activities, but also by the distinctive armament, ornaments, and above all pottery, associated together everywhere in their graves. Indeed the inevitable drinking cup which gives a name to its users, may be more than a readily recognized diagnostic symptom; it symbolizes beer as one source of their influence, as a vodka flask or a gin bottle would disclose an instrument of European domination in Siberia and Africa respectively. Millet grains ² were in fact found in a beaker in Portugal.

The Beaker folk are known principally from graves which never form large cemeteries. When their pottery and other relics are found in settlements, they are normally mixed, save perhaps in Central Spain, with remains distinctive of other groups. Thus Beaker folk appear as bands of armed merchants who engaged in trading copper, gold, amber, callais, and similar scarce substances which are frequently found in their graves. The bands included smiths—the mould for casting a West European dagger was found in a Moravian Beaker-grave ³—and women who everywhere fashioned the distinctive vases with

¹ Brøndsted, *Danmarks*, 198, 345.

² *ÇIAA.*, 1930 (Portugal), 356.

³ *Casopis vlastnického spolku museijního v Olomouci*, XLI (1929), T. II; Forssander, *Ostiskand. Norden*, 70.

scrupulous attention to traditional details of form and ornament. They roved from Southern Spain and Sicily to the North Sea coasts and from Portugal and Brittany to the Tisza and the Vistula.¹ Sometimes they settled down, by preference in regions of natural wealth or at the junctions of important

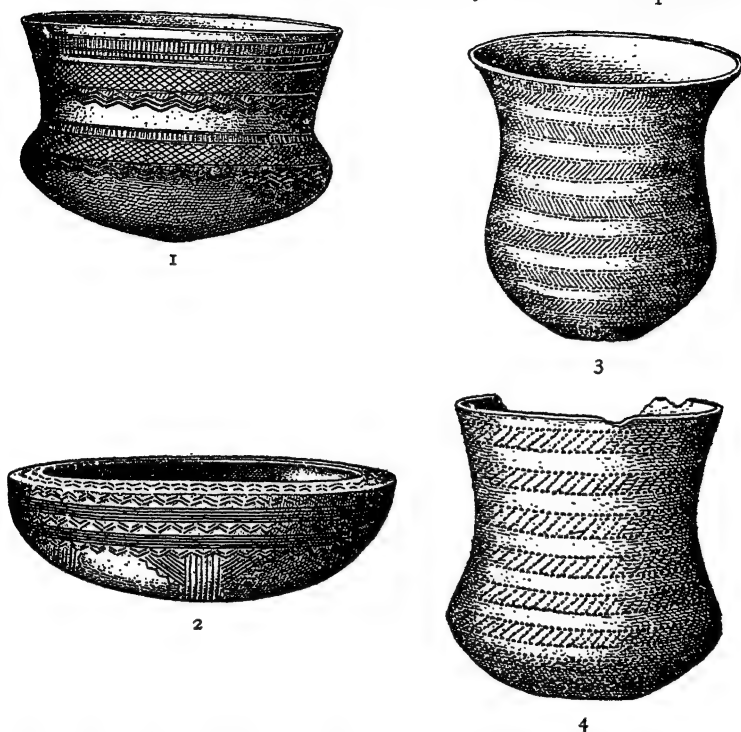


FIG. 107. Beaker Pottery: 1 ($\frac{1}{2}$) and 2 ($\frac{1}{2}$), Palmella, Portugal; 3, La Halliade, South France ($\frac{1}{2}$); 4, Villafraati, Sicily ($\frac{1}{2}$).

routes. At times they obtained economic and political authority over established communities of different cultures, formed hybrid groups with these, and even led them on farther wanderings; the Beaker-groups that invaded Britain give indications of composite origin.

A detailed study of Beaker pottery does not disclose a single and irreversible expansion. It suggests an early

¹ General review down to 1927 in A. del Castillo, *La Cultura del Vaso campaniforme*, Barcelona, 1928; add for Poland, Żurowski, *Wiad. Arch.*, XI (1932), 116-156; for Central Germany, Neumann, *PZ.*, XX (1929), 35 ff.; for North Germany, *NNU.*, II (1928), 25 ff.; X, 20; for Holland, Bursch, *Oudh. Med.*, XIV (1933), 39-122.

uniformity so remarkable as to be hardly explicable merely by the rapidity of a migration and the conservatism of the migrants followed by the emergence of distinct local groups, but the maintenance of intercourse between some of these at least. The "classical" beaker (Fig. 107, 3-4), made of relatively fine grit-tempered ware coated with a burnished slip that is liable to peel off and brick red to black in colour, is decorated with zones of "rouletted" hatchings, alternating with plain zones. The "rouletted" decoration is executed with a comb



FIG. 108. Beaker, wrist-guard and associated vases, Woischwitz, Silesia. After Seger (4).

with very short teeth, separated by extremely narrow interstices and probably with a curved edge. It yields a practically continuous line of round or, more often, rectangular dots, separated by low septa. The horizontal zones may be combined with a radial decoration on the base.

This simple classic style is represented in nearly every region¹ reached by the Beaker folk though it grows less common and characteristic as one goes eastward from the Rhine-Brenner line. But wherever Beaker folk settled down at all local styles grew up. These are presumably in general later and specialized variants on the originally common theme. On the other hand an Iberic style using sharply incised or stamped lines (well represented at Ciempozuelos and Palmella) (Fig.

¹ e.g. Castillo, pls. VII, 4 (Andalusia); L, 2 (Portugal); LXI (Castellon), LXXVI, 1 (Catalonia); LXXXIV (Galicia); XCIV (Hautes Pyrenées); CIII (Brittany); CXIX, 2 (Sicily); CXXIII (Po valley); CL, 7 (Bohemia); CLIII, 8 (Moravia); CLXXXII, 2 (Middle Rhine).

107, 1-2) is probably older than the classic style.¹ Be that as it may, some local or derivative styles have such a wide distribution that they must denote secondary intercourse if the dispersion of the rouletted style be ascribed to a primary expansion. For instance, beakers decorated by a cord, wrapped spirally

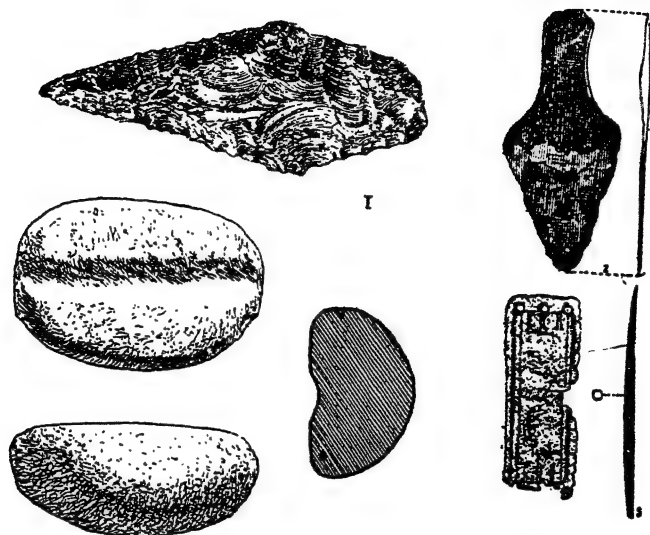


FIG. 109. West European dagger (Bohemia) and flint copy (Silesia); arrow-straightener (Wiltshire); gold leaf from wrist-guard and copper awl, Bohemia ($\frac{1}{2}$).

round the vase, occur in Northern Holland, Scotland, Brittany, and South France.²

In the Iberian Peninsula, South France, and Central Europe beakers are often associated in graves with shallow hemispherical bowls decorated in the same technique but more often with patterns radiating from the base (Fig. 107, 2).

The distinctive weapon associated everywhere with the Beaker complex is the flat-tanged West European dagger (Fig. 109, 2). The tang may be flanged; the hilt, never riveted to the blade, was hollowed at the base in the Egyptian manner explained on p. 118. Flint copies were frequently made as substitutes at least for funerary use. Arrows were normally

¹ Nordmann, "Megalithic," 100; *Actas y Mem.*, XIV (1935), Noticiario, 5; Bosch-Gimpera, *Man*, XL (1940), 2. But the stratigraphy of Somaen on which the latter relies does not, as published, afford any clue as to the relations between my "classic" and "grand" styles.

² Childe, *Scotland*, 83; *PCBI*, 93.

tipped with tanged-and-barbed flint heads in Western Europe, with hollow-based heads in Holland, Central Europe and Upper Italy. In Central Europe (including Italy and Poland), Holland and Great Britain, rarely also in Brittany, but only once certainly in Spain,¹ the Beaker archer wore a concave plaque of stone perforated at the four corners as a *wrist-guard* for protection against the recoil of the bow-string (Fig. 108). In South France, Brittany, and Bohemia² thin strips of gold leaf (Fig. 109, 4), similarly perforated, may have been mounted on leather wristlets for the same purpose. Thick clay plaques of the same plan, but flat and also perforated at the corners, are found on Beaker sites in Portugal and Spain and may also have been used as wrist-guards. Stone arrow-straighteners,³ used by Beaker folk in Bohemia and Poland and also in Sardinia, do not seem to be an original part of their equipment since in Central Europe they appear in pre-Beaker times, in Britain only in the early Middle Bronze Age, well after the Beaker invasions were over.

A distinctive element of the Beaker folk's costume was a button of stone, bone, amber, or jet with V perforations.

In Northern Sicily, Sardinia, the Iberian Peninsula, South France and Brittany, and the Channel Islands, Beakers and their normal associated armaments are found, generally accompanied by relics distinctive of other cultures, in collective sepulchres—natural caves,⁴ rock-cut tombs,⁵ tholoi, orthostatic passage graves,⁶ gallery graves,⁷ and segmented cists.⁸ In no case, however, do they demonstrably accompany the primary interments while in isolated instances they were proved to be secondary (p. 217). Beaker-folk had sometimes obtained admission to the families or clans entitled to burial in such sepulchres, but arrived only after the tombs were erected. In North Italy and throughout Central Europe, Beaker-folk were interred individually and strictly contracted, in simple trench graves.

¹ *Corona d'Estudis dedica a sus Martires*, Madrid, 1941, 128.

² Mat., 1881, 552; Cazalis de Fondouce, *Les Allées couvertes de Provence*; *L'Anthr.*, XLIV, 507; Childe, *Danube*, 191, 193.

³ *PA.*, XXXIX (1933), 50-3; cf. pp. 102, 106.

⁴ e.g. Villafraiti in Sicily, commonly in the caves of Monges, near Narbonne, in Central and Northern Spain and in Portugal.

⁵ e.g. Anghelu Ruju, Sardinia; Palmella and Alapraia (Portugal).

⁶ e.g. at Los Millares and other Almerian sites, and in Var.

⁷ e.g. in Brittany.

⁸ Puig Rodo (Catalonia) and La Halliade (Hautes Pyrenées).

These form cemeteries comprising in Moravia as many as thirty graves,¹ but normally considerably less, as if the communities settled in one place were small. But the Beaker folk must have settled down and multiplied in Central Europe since the total numbers of Beaker burials recorded from Bohemia is about 300, from Saxo-Thuringia 103,² and from the small province of Veluwe in Holland 150.³ Settled in Central Europe, the Beaker-folk formed hybrid cultures through contact with other groups. In Moravia some adopted cremation and burial under barrows perhaps from Battle-axe folk. From these in the Rhineland, Holland and North Germany Beaker-folk adopted barrow-burial, battle-axes, and some elements even in ceramic decoration, including presumably the use of cord impressions. In fact the contact produced a hybrid population with a composite culture and art. At least the A-C group of Beaker invaders in Britain is an offshoot of such a hybrid.

The people buried with Bell-beakers at Ciempozuelos, near Madrid ⁴ and almost invariably in Central Europe and Britain, are round-headed, and brachycranial skulls are found in nearly every collective tomb that yields Bell-beakers, even in regions so dominantly Mediterranean as Sardinia and Sicily. In this instance therefore it looks as if culture and race ⁵ coincided and one might legitimately speak of a Beaker race. Even in Central Europe Beaker-skulls had been trephined.

Both in form and decoration Bell-beakers of the classic style and the associated bowls look like copies of esparto-grass vessels such as are made in the Sudan to-day.⁶ Beaker-like vases decorated with zones of incision which might be clay translations of such basketry vessels occur in Egypt in the early "Tasian" phase of culture.⁷ Pot-sherds found in a still undatable settlement on the western edge of the Nile valley at Armant and in a "neolithic" context in the Sudan and Africa

¹ Childe, *Danube*, 192; cf. *Mannus*, XXXI (1939), 467 ff., for a cemetery of twenty-four graves in Swabia.

² *PZ.*, XX, 45.

³ *Oudh. Med.*, 1933, 120.

⁴ *Bol. R. Acad. Madrid*, LXXI, 22 ff.

⁵ *MAGW.*, LIII, 263, reporting on Central European Beaker-skulls, attributes all to the Alpine race and denies racial connections with Spain or Sicily; but cf., Coon, *Races of Europe*, pp. 156-7.

⁶ Schuchhardt, *PZ.*, I (1909), 43.

⁷ Childe, *NLMAE.*, 53, fig. 13.

Minor¹ show roulette decoration, though rather coarser than that on classical beakers. A hollow-based hilt like that regularly attached to West European daggers was attached to flint and copper blades on the Nile in Predynastic times.² Hollow-based arrow-heads were characteristic of the "neolithic" Fayum and of Early Predynastic Egypt. There is accordingly some evidence for an African element in the Beaker culture. Still most authorities hold that the culture as we know it took form in Central Spain and spread thence.³

The Beaker folk's expansion, from whatever cradle it started, was presumably rapid. It thus constitutes a convenient chronological horizon in several otherwise separated areas. But the number of beakers and the variety of their decorations in each area imply that such vases must have been in fashion for several generations. It is therefore a grave error to treat all beakers as contemporary.⁴ Such vases mark rather a substantial period of time, not everywhere of equal duration. In Central Europe beakers go back to period III; in Holland they were even associated with pottery of very late Danubian I style. On the other hand in Moravia, Bohemia, and even on the Rhine, beakers⁵ are associated in graves with round-heeled riveted daggers typical of period IV and in Austria⁶ with mature Unĕtician forms. A beaker, with exact parallels in Bohemia and in Sardinia too, reached Denmark, in Neolithic IIIc *after* the marine transgression, *before* which the earliest beakers reached Britain (pp. 183, 329). And the bronzes of period IV are often decorated with patterns typical of motives that recur on beakers. In other words beakers remained in fashion into period IV in Central Europe and the Beaker and Unĕtician cultures overlap. Beakers do not denote a point in time. But the Beaker cultures are everywhere on the same economic plane. Judged by form and decoration most British and Central European Beakers seem to be later than the "classic type", those from the edge of the Beaker territory—Scotland and Poland—looking particularly late.

¹ Mond and Myres, *Cemeteries of Armant*, 268 ff.; Arkell, *Early Khar-toum*, pl. 89; Vaufray, *Inst. Pal. Hum.*, *Mém.* 20 (1939), 72 ff.

² Childe, *NLMAE.*, 98, fig. 39.

³ Castillo, *op. cit.*, Bosch-Gimpera, *Real.*, X, 356.

⁴ Forssander, *Ostskand. Norden*, 37; Childe, *Am. Anthr.*, XXXIX (1937), 10.

⁵ Childe, *Danube*, 190; Forssander *Ostskand. Norden*, 72; Mannus, XXXI, 478, fig. 17.

⁶ *PZ.*, XXV, 137.

CHAPTER XIII

CIVILIZATION IN SICILY AND ITALY

IN a westerly direction the rays of the Oriental culture should strike upon the Apennine Peninsula first after Greece. But the geography of the Peninsula itself should warn us not to treat it as an unit, but to expect the same zoning as has been in fact detected in Greece and in the wider tracts hitherto surveyed. The state of prehistoric archæology, however, forbids too high expectations. The bare outlines of Italian prehistory were ably and boldly drawn last century by Orsi and by Pigorini and his school and were admirably summarized by Peet ¹ in 1909. They have not been filled in by subsequent scientific excavations and systematic publications so as to yield a really clear picture even in 1946. The survey here attempted is more than usually provisional and inconclusive. Only in South-Eastern Sicily is a reasonably complete sequence of prehistoric cultures available, taking the story down to the historical period, early ushered in by the Greek colonization. In South Italy, especially Apulia, a similar sequence is partially applicable. In the north the archæological record begins to clear only when contacts were established with the Danubian province in the early metal age.

THE NEW STONE AGE IN SICILY AND SOUTHERN ITALY

Neolithic societies appear most clearly in South-East Sicily ² and Apulia, living in regular little villages, ³ protected by flat-bottomed ditches, 2·20 to 3 m. wide and 2 to 3 m. deep, cut in the rock supplemented on the inside by built stone walls. In Apulia there are often two rings of defences, ⁴ the inner comprising rather less than 2 acres, but the outer circuit, when present, bringing the total enclosed area up to 5 or 6 acres. Air photographs ⁵ taken during the recent war have

¹ For points not specially documented, see Peet, *The Stone and Bronze Ages in Italy and Sicily*, Oxford, 1909.

² Latest summary, Cafici in *Real.*, XII, 188-207.

³ In Sicily, Megara Hyblaea, *MA.*, XXVII, 121; Stentinello, *BP.*, XLI, 160 ff.

⁴ Ridola, *BP.*, XLIV (1924), 107-121.

⁵ *Antiquity*, XX, 191.

revealed an enormous number of such villages or "forts" in Southern Italy. On the Tirlecchia ridge near Matera, two were only 400 yards apart.¹ The dwellings themselves are unknown. Most forts comprise within their ditches many circular pits, generally interpreted as pit-dwellings but more probably silos. Many natural caves were inhabited too and also used at some time for burials.

The villagers lived by cultivating undefined cereals which they ground on saddle querns and breeding cattle, goats, sheep, pigs, and allegedly buffaloes,² collecting shellfish, and hunting. As in Asia and Greece they used the sling,³ but probably not the bow. For carpentry polished pebble axes were manufactured rather sparingly; roughly flaked choppers and picks of basalt and quartzite are far commoner. For knives, in addition to flint, obsidian was used. It must have been imported from the Lipari Islands. Neolithic remains of the type under discussion have in fact been collected from these islands,⁴ and also on the Tremiti Islands and Capri. So the neolithic farmers must have been efficient navigators too.

The villages and caves have yielded much pottery belonging to several distinct kinds, not all contemporary. Stevenson⁵ would distinguish three main groups that may represent consecutive periods too. The most widespread and probably earliest ware is rough, but used for quite sophisticated vessels provided with flat bases or even standrings and vertically pierced lug handles. These are decorated all over with patterns impressed or pinched up with finger-tips, as in Körös ware (p. 94), or more characteristically executed with a shell (cardial ware). But round Syracuse in the Stentinello style other stamps were preferred and produced effects curiously reminiscent of the "Grand Style" in Denmark (p. 185).⁶

Group II comprises black to red polished vases sometimes decorated with cross-hatched ribbons and triangles and other simple devices scratched in the clay *after firing*. In Eastern Sicily this group is represented at Tre Fontane, Catania,⁷

¹ Ridola, *BP.*, XLIV (1924), 107-121.

² *BP.*, XLV, 92.

³ *BP.*, XLVI, 152.

⁴ *BP.*, XLVIII, 90 ff.

⁵ Verbal information.

⁶ Cf. *MA.*, XXIII, pls. III, 2; IV, 9, and V, 10, with Sophus Müller, *Ständers Kunst*, figs. 121-136.

⁷ *MA.*, XXIII (1915), 485 ff.

better than round Syracuse. But buff wares painted¹ in red or in red outlined with black occur in the last third of the neolithic silt in the ditch at Megara Hyblaea but seem to go with group II in Apulia.

Group III is best defined by Peet's "fine painted ware" of Apulia. This occurs in Sicily not only at Tre Fontane (Catania), but also at Monte Pelegriano (Palermo)² in the north-west. The designs, in warm black paint, include stumpy spirals (Fig. 110, 1), and maeander, step, triangle, and ladder patterns. Fig. 110, 1, represents a favourite form. Characteristic are the horizontal tubular handles that recall both the "horned lugs" of Thermi III and the handles of Gerzean stone vases from Egypt. These handles are sometimes surmounted by the heads of bulls or rams that may be highly elaborated.³ But at Ripoli in the Vibrata valley painted cups have nose-bridge handles quite like Fig. 117. One vase from Serra d'Alto (Matera)

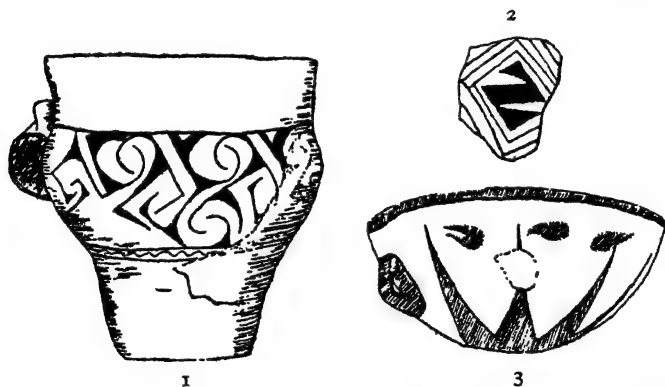


FIG. 110. Neolithic painted pottery: 1, black on buff, Molfetta ($\frac{1}{2}$); 2, Matera; 3, red and black on buff, Megara Hyblaea ($\frac{1}{2}$).

stands on modelled human feet,⁴ while several vessels have "noses", some also eyes⁵ modelled just below the rim as in Cretan Trapeza ware.

Painted vases of group III accompanied flexed skeletons in pit graves at Ripoli on the Vibrata⁶ and Canne⁷ and

¹ On the painted wares see Rellini, *La più antica Ceramica dipinta in Italia*, Rome, 1935.

² Rellini, *Ceramica*, 107.

³ BP., XLV, 113; Rellini, *Ceramica*, figs. 29, 54-8.

⁴ *Not. Scavi.*, 1925, 257 ff., Laviosa-Zambotti, *Culture agricole*, 27.

⁵ Rellini, *Ceramica*, 56, 62.

⁶ Rellini, *ibid.*, 18-22.

⁷ *Ibid.*, 67.

Molfetta¹ in Apulia. At Molfetta some graves had been dug into the original settlement's collapsed wall (which Mosso took for a "paved street"). So fine painted ware belongs to a late stage in the South Italian "neolithic".

Neolithic culture appears in Sicily and Italy so highly organized that its autochthony seems unlikely. But its foreign roots are not easily located. A general similarity to Cretan neolithic is undeniable. The cardial decoration of group I pottery can be accurately matched on neolithic wares from Syria² but also in North Africa as far west as Cape Spartel and then in the Iberian Peninsula as we shall see (p. 262). But the absence of bows and arrows is against an African origin. The Balkan Körös culture can hardly be an ancestor though it may be a colateral.³ Vase-painting and a good deal else can best be derived from Greece; the painted designs on sherds from Chirospilia in Levkas are particularly close to Apulian group III, and there are older incised wares that may be compared with group I. But the clay plastic of the Balkans is surprisingly absent from Italy.

An indication of the relative and absolute age of the Sicilian Stentinello phase is afforded by the filling of the fosse at Megara Hyblæa.⁴ The neolithic refuse was covered by a sterile layer 30 to 55 cm. deep; then came a thin stratum containing fifth century Greek pottery; finally 50 to 60 cm. of sterile earth represent the accumulation of the last 2,450 years. Hence Orsi deduced a date about 2500 B.C. for the desertion of the neolithic village, but mathematically his figure could be reduced by five centuries.

SICULAN CIVILIZATION

In Eastern Sicily the neolithic villages were deserted, to be replaced by little townships of a more East Mediterranean type. Agriculture now took an equal place with stock-breeding, and the bones of horses occur for the first time. The townships were planted on naturally defensible hill-tops but were still fortified like the neolithic villages. The walled areas were small—in two cases the estimate given is 1 hectare, or

¹ *MA.*, XX, 255-8; Mayer, *Matera und Molfetta*, Leipzig, 1924, 20-30.

² e.g. *AJA.*, XLI (1937), 10 (Judeideh on Orontes).

³ Cf. Laviosa-Zambotti, *Culture agricole*, 303-310.

⁴ *MA* XXVII 7-9

2½ acres—but the large cemeteries of collective tombs imply a substantial settled population; thirty-one tombs have been examined at Castelluccio, twenty at Syracuse, eleven at Monte Salia, each containing from 50 to 200 corpses.¹ Its surplus could find an outlet in industry and trade.

Flint was systematically mined at Monte Tabuto by expert miners who were presumably specialists. Metal was imported and apparently worked locally into simple flat axes (known only by a couple of miniatures made for funerary purposes), triangular riveted daggers and ornaments such as spectacle-spirals, and tubes of coiled wire. However, metal was so rare that polished stone axes and roughly flaked picks were still made and used even for carving the tombs. Stone beads were manufactured for the first time.

Foreign trade is explicitly disclosed by bossed bone plaques (Fig. 111) found in several Siculan I tombs, in the ruins



FIG. 111. Bossed bone plaque, Castelluccio. After Evans (4).

of Troy II-IV and in the "neolithic" temple of Hal Tarxien in Malta.² Its effects may also be recognized in a bone pommel³ of the same type as the Trojan pommel shown in Fig. 21, 3, and by numerous axe-amulets, but some alleged "amber" beads are made of a local resin.

Pottery remained a domestic industry, but the forms of the hand-made vases—hour-glass tankards, high-handled mugs (Fig. 112, 4-5) and pedestalled bowls with handles joining bowl and stem—are quite alien to the Stentinello tradition. They may be plain or painted in black on a reddish ground with geometric designs. On some late vases from Valledlunga the black is outlined in white, giving somewhat the effect of Dimini ware.

The dead were now buried in rock-cut tombs of East Mediterranean style (Fig. 104). The chambers are generally more or less circular in plan and may be preceded by a smaller

¹ von Duhn, *Italische Gräberkunde*.

³ BP., XLIII, pl. II, 6.

² BP., XLVI (1926), 13.

ante-chamber. When cut in a vertical cliff face the entrance is normally a small window-like aperture, rebated to receive the blocking stone. The rock-cut window was replaced by a porthole slab in one tomb at Monte Salia.¹ The blocking stone in one tomb at Castelluccio was carved with spirals in low relief; the entrance to the inner chamber of another tomb in the same cemetery was closed by two carved slabs, which, combined



FIG. 112. Copper Age pottery: 1-2, pit-cave, Otranto; 3, "dolmen" of Bisceglie; 4-5, Siculan I ($\frac{1}{2}$).

(Fig. 113), produce the effect of the funerary goddess carved on many megalithic tombs in France and on the stele from Troy I mentioned on p. 40. The tombs often open on to a semi-circular porch or forecourt cut in the rock, the walls of which were in at least one case carved with pilasters.² In some late tombs at Monteracello the vault had been reproduced above ground in a rectangular cist (2.05 m. by 1.2 m. square) framed with four large slabs on edge in one of which a square

¹ *BP.*, XLIII, 17.

² von Duhn, pls. 4, 18; 6, 22 and 7, 23; *BP.*, XVIII, 75; *Not. Sc.*, 1920, 304; *Ausonia*, I, 7.

window had been cut to represent the door. The disused galleries of flint mines were also used as burial places. All these tombs were used as family vaults in which numerous skeletons were deposited, sometimes seated as if at a feast. In the townships single clay horns have been found and interpreted as ritual objects.¹

In a general way the Siculan I culture, economy, and runerary ritual seem to result from a further extension of the same causes as inspired the Early Helladic culture of Greece,

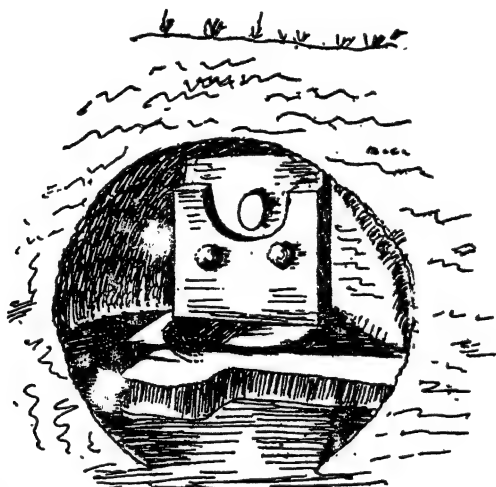


FIG. 113. View into Siculan I tomb, Castelluccio.

But the pottery has been compared rather to Middle Helladic matt-painted ware by Dr. Bernabo Brea. The bossed bone plaques from Troy should give a reliable date in the history of Siculan I culture, but that their stratigraphical position is dubious.² They are compatible with a date for its rise about 2000 B.C. On the other hand they could be made to harmonize with Orsi's deductions at Megara Hyblæa but for the reliable dates available for the succeeding Siculan II period. For a number of transitional tombs and cemeteries illustrate the passage from Siculan I to Siculan II which was completed by the fourteenth century B.C.

Before 1300 B.C. Sicilian economy had been transformed

¹ *BP.*, XXXVI, pl. 12, 4; *MA.*, XVIII, 619.

² Bittel, *Marburger Studien*, I (1938), 10-13.

into one of Bronze Age type by the incorporation of the province into the Mycenæan commercial system. Late Helladic III vases, gold rings, bronze mirrors and rapiers and paste beads were imported from the Ægean. Bronze-smiths, established in the Siculan II townships produced local variations of L.M.I. rapiers,¹ of Troadic flame-shaped knives (Fig. 114, 1) and of Ægean shaft-hole axes. The local chief who concentrated wealth at Pantalica built himself a little palace in which Mosso claimed to detect barbaric imitations of Knossian architecture, and shrines were furnished with "horns of consecration" in clay. Indeed the Minoan influence was so strong that Evans suspected a Cretan colonization of the island under a Minoan prince.²



FIG. 114. Siculan II knife and razor, Pantalica ($\frac{1}{2}$).

But essentially Siculan II culture is rooted in the older traditions. Pottery was not industrialized. The hand-made vases, though unpainted and decorated in a new style, preserve many Siculan I forms. The smith was not wholly dependent on Ægean models. The double-edged razors with a nick at the base of the blade (Fig. 114, 2) are more like Continental types of periods V and VI than Mycenæan forms. Safety-pins were often worn, but the developments from the simplest violin-bow type diverge from the lines followed in Greece, and Reinecke attributes the invention itself to the Siculans.³ Despite modifications of funerary architecture and ritual, the collective chamber tombs of Siculan II are the direct descendants of those of Siculan I. The large number of tombs, 1,000 to 3,000 in a single cemetery, illustrate the growth of population under the new economic regime, but also the substantial duration of the period. The L.M.I. models underlying the local rapiers suggest an initial date near 1500 B.C., the ceramic imports from Greece may cover the fourteenth century, but fibulæ more advanced than any Mycenæan should denote an extension beyond 1200.

¹ *Arch.*, LIX (1906), 108 ff.

² *P of M.*, I, 3.

³ Cf. von Merhart, *Bonner Jahrbücher*, 147, 71 ff.

A century later the transition to Siculan III should have been accomplished, and the latter culture persisted till the Greek colonization in the eighth century B.C.

NORTH-WESTERN SICILY

The sea-borne impulses that stimulated progress in South-Eastern Sicily and Apulia, seem to have been arrested by the Straits of Messina and the mountains of Central Sicily. West of Cefalu neither the neolithic culture of Stentinello nor yet the Siculan I-II civilization is represented.¹ But at least the neolithic stage represented by fine painted ware (group III) reached the Palermo district. On the other hand, from a cave at Villafrati, near Palermo,² von Adrian collected human remains (brachycranial), polished stone axes, a classic Beaker (Fig. 107, 4), vases decorated with finely incised and hatched ribbons and plain vases. Schmidt,³ classing Villafrati as "neolithic", equated the deposit with Stentinello and hence built up a fantastically inflated chronology for the whole of Europe.

But from Cefalu to Eri-Trapani many little cemeteries of pit-caves have been discovered—a group at Boccadifalco, near Palermo,⁴ being typical. Such tombs normally contain oval-mouthed amphoræ, mugs or carinated cups and double-vases in black or red-wash ware. The vessels are generally plain, occasionally decorated with warts, with curvilinear incisions and rows of dots or with stripes of thin white paint. These cemeteries must take the place of the missing Siculan culture in North-West Sicily.⁵ In fact the tomb shape is Siculan, and scraps of copper as well as stone beads and obsidian blades were found in one tomb at Boccadifalco. And even a riveted flat copper dagger, over 12 cm. long, accompanied the foregoing class of pottery in the Grotta della Chiusilla at Isnello.⁶ Now the plain pottery from Villafrati is identical with that just described. Moreover one pit-cave at Carini actually contained a Bell-beaker,⁷ and in another incised ware

¹ A stray vase painted in Molfetta style was found at Monte Pelegrino (Palermo), *BP.*, XLV, 113.

² *Real.*, XII, pls. 30-2.

³ *PZ.*, I, 133 ff.

⁴ *Not. Sc.*, 1935, 391-405; cf. *ibid.*, 1928, 490; 1931, 395.

⁵ *6th Annual Report*, Institute of Archaeology, University of London, 1950.

⁶ *BP.*, 1938, 46-50.

⁷ *Annales de géologie et de paléontologie* (Palermo), 28 (1920), pl. 1.

of Villafraati style is said to have been found with ingot-torques at Villagrazia near Palermo,¹ though in the latter case the association is very doubtful. Hence, though sherds of Beaker were found at Geraci (Termini Imerese)² and Tre Fontane (Catania)³ where "neolithic" ware also occurred, there are no good grounds for regarding Beakers in Sicily as older than Siculan I.

The idea of the chamber tomb and some rudiments of metallurgical knowledge may have percolated to North-West Sicily across the mountains or through the Straits from the secondary focus of diffusion on the island's south-eastern coasts. The impulse from that quarter was not strong enough to produce a tertiary centre of urban culture.

THE EARLY BRONZE AGE IN SOUTH ITALY

The neolithic societies of the Apennine Peninsula developed not to a semi-urban culture of Mediterranean type but to a form more proper to the temperate zone, albeit not without stimuli from the East Mediterranean. The latter are disclosed, if not by the general adoption of collective burial, as in the Early Ægean Bronze Age—for that practice may go back to the "neolithic" phase—at least by the excavation in the rock of pit-cave tombs of East Mediterranean type.⁴ The earliest small trinkets of metal come from such, and some have been dug into the silted ditches of deserted "neolithic" villages.⁵ A clay stamp (*pintadera*) from Molfetta⁶ may belong to the same horizon or to the "neolithic".

As a substitute for rock-cut tombs or natural caves, megalithic chambers might be built and buried under a cairn, supported by a built revetment. The "dolmens" are really either passage graves with a chamber no wider than the passage or long cists, one segmented.⁷ One dolmenic cist was equipped with a porthole stone,⁸ placed, however, at the side, not at the end.

¹ *Annales de géol.*, Palermo, 46 (1927), pls. I and IV.

² *BP.*, XLII, supplement.

³ *MA.*, XXIII, 488 ff., pl. IV, 10.

⁴ *LAAA.*, II, 80; Gervasio, *I Dolmen* (Bari, 1913), 88 ff.; *MA.*, XXVI, 494; *BP.*, 1938, 42.

⁵ *BP.*, XLIV, 116.

⁶ Mayer, *Matera*, 67 and pl. IX, 19.

⁷ Gervasio, *I Dolmen*, 63, fig. 24.

⁸ *Ibid.*, 68.

The pottery was always burnished like Balkan Early Bronze Age wares and at first generally plain. Among presumably early forms are a group of handled vessels with striking parallels in Thessalian III.¹ Some vessels were provided with indented lugs like the Early Macedonian. But in the "dolmens", as in other types of sepulchre, appear carinated bowls, cups, and mugs, all characterized by high and curiously elaborated handles (Fig. 112). The elaboration may well be a development of the "neolithic" fashion noted on the "fine-painted" ware of Matera (p. 227) and observed also in Macedonia. But handles, exactly like Fig. 112, 3, will meet us again in the caves of Liguria, South France, and Catalonia. Moreover, with them were found in the "dolmen" of Bisceglie, beads of amber, a substance which arrived in South France just when such odd handles were in fashion. Taken in conjunction with the long cist plan of the tombs, they confirm the impression of some connexion between Apulia and the Gulf of Lions at this period. But in the French and Ligurian sequences it was a comparatively late one, and in Italy the handle-types of Fig. 112, 1-2 remain characteristic of Rellini's "Apennine culture" that lasted into the Iron Age.

Rock-cut tombs of South Italian pit-cave type extend northward to Latium, and even in Tuscany natural caves were used for collective burials. The peculiar Central Italian culture, illustrated by their furniture, may be named "Rinaldoni"² after a characteristically furnished tomb. It may reflect a northward extension of Ægean trade. There are tin ores in Tuscany, and there the sepulchral cave of Monte Bradoni contained two V-bored buttons of metallic tin, a mid rib dagger like Fig. 116a, of Early Minoan affinities, and brachycranial skeletons. Similar daggers and flat-axes of copper have been recovered from other Rinaldoni tombs. But while the tomb-form is southern, the furniture shares with the Remedello culture of the Po valley stone battle-axes³ and finely worked flint daggers and arrow-heads. The most distinctive ceramic form is a bottle, burnished but undecorated and provided only

¹ Quagliati, *La Puglia preistorica* (Trani, 1936), 154-178; with fig. 69, cf. Wace and Thompson, fig. 58, a.

² Peet and earlier writers confused the Rinaldoni culture with that of Remedello. The distinction is due to Laviosa-Zambotti, *Studi Etruschi*, XIII (1939), 58.

³ Viterbo (Peet); add *BP.*, XL, 53; XLIII, 97.

with subcutaneous handles like those of the Danubian III Baden pottery.

The blending of southern and northern elements here illustrated may foreshadow a linkage between the Ægean and Central European commercial systems, that eventually transformed the peninsula's economy to a "Continental Bronze Age" one. But in the peninsula most of the material comes from caves, used for habitation and burial only by backward groups. Such, even when they obtained amber beads and winged axes, ogival daggers and swords of bronze, continued

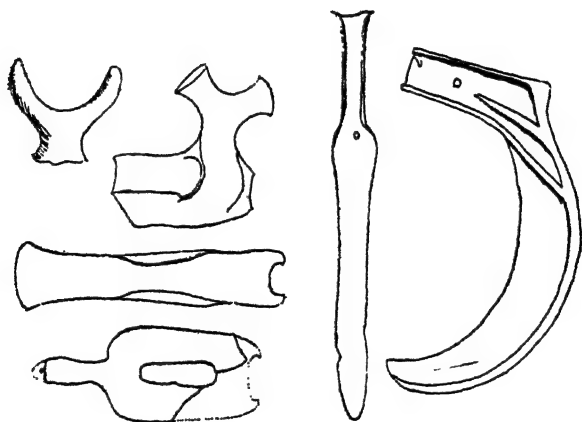


FIG. 115. Vase-handles ($\frac{3}{4}$), and bronzes ($\frac{1}{2}$) from *terramara* of Taranto.

to use stone for axes. They decorated their pottery profusely with cordons or punctured ribbons forming spiral and maeander patterns that may denote some Danubian influence and continued to elaborate vase handles in a native way. Pottery of this Apennine type continued to be made not only into the late Middle Bronze Age defined by winged axes and slashing swords,¹ but even when sixth century Greek pottery was being imported!²

The cave material very imperfectly reflects the reactions on the peninsula of the amber trade between Central Europe and Mycenæan Greece that was borne by the Adriatic Sea. But it eventually led to the rise even in South Italy of a Bronze

¹ At Belleverde, Cetona, *Not. Scavi*, 1933, 50-96.

² In the "Grottone" di Manacore, Gargano, *BP.*, LIV (1934), 20 ff.

Age culture of Central European type. Few bronzes characteristic of Danubian IV have been found there—an undescribed interment in a stone cist was furnished with a flanged axe, a bronze hilted dagger, and perhaps a halberd.¹ Types of period V are found also in settlements. At Punto del Tonno (Taranto),² a “neolithic” settlement had grown into a Bronze Age village, occupied continuously for a long time and so forming a *tell* like the *terremare* of the Po valley. Here winged axes, and flanged sickles of North Italian type, a variant of a late Mycenæan dagger (Fig. 115) and a safety-pin like Fig. 118 were made or imported. The contemporary vases were provided with lunate or horned handles as in the *terremare*, but others were decorated with the spirals and maeanders popular on all “Apennine” wares. The bronzes illustrate both Ægean and Central European trade but on the whole the peninsula is by now incorporated in the Central European commercial system.

In Central Europe the metal types from Punto del Tonno would belong to period V—the Middle Bronze Age. But from the succeeding settlement sherds of L.M.IIIb pottery and a figurine are reported. If the stratification be reliable—the excavation was not unimpeachable—the Middle Bronze Age must have begun little after 1400 B.C.

NEOLITHIC CULTURES IN UPPER ITALY

In the third natural zone of the peninsula, a culture sequence based on stratigraphical observations is available only in Liguria and since 1939 thanks to fresh excavations in the cave of Arene Candide by L. Bernabò Brea.³ It may not be applicable to the whole of Upper Italy; for Liguria was always a backward, provincial area. Indeed in the last of the cave's five post-mesolithic strata stone axes were still plentiful though the pottery is appropriate to the fifth or fourth century B.C.

After a long mesolithic (Sauveterrian) occupation the cave

¹ *BP.*, XXVI (1900), pl. I (Parco di Monaci), association questioned, *BP.*, 1938, 64.

² Säfund in *Dragma Martino P. Nilsson* (Skrifter Svensk. Institut, Rome, 1939), 458 ff.

³ L. Bernabò Brea, *Gli Scavi nella Caverna delle Arene Candide*, Bordighera, 1946.

was visited by herdsmen breeding goats, pigs, and cattle. They used polished stone axes and imported obsidian blades and made sophisticated pots with flat bases and annular handles which they decorated profusely with incised lines, finger-nail impressions, or in cardial-technique. On the ceramic evidence the earliest neolithic culture on the Tyrrhenian coast of Upper Italy belongs to the same cycle already encountered in Southern Italy and to meet us again in Sardinia and Spain.

In layer II the older tradition is blended with Danubian II elements—socketed ladles, clay stamps,¹ and figurines. Decoration is now generally scratched after firing as in South Italian group II; the square-mouthed vase (Fig. 117, 2) is the most distinctive form. The dead were buried, individually, and contracted in little stone cists within the cave. A parallel “Danubian” culture east of the Apennines may be inferred from many stray finds, but the only connected remains come from a cemetery of contracted burials at Chiozza (Scandiano) in the Po valley.² Possibly the “Chamblandes” cist-graves that extend from Upper Italy across the Alps (p. 288) belong here. *Spondylus* shells from caves in Istria as well as Liguria help to explain the “Danubian” connections now observed (cf. p. 91).

The third stratum at Arene Candide is characterized by plain Western pottery such as we shall find distinctive of the earliest neolithic in South France and the Cortaillod culture of the Swiss lakes. Now people of the Cortaillod culture were already established at Lagozza and other stations on the lakes of western Lombardy,³ having presumably crossed the Alpine passes from Switzerland. If the third occupation of Arene Candide be due to an extension of the same movement, it need cause no surprise that the culture sequence in Liguria partly inverts that observed on the opposite shores of the Gulf of Lions (p. 293). In the Ligurian cave a Western culture still survives in stratum IV but is characterized by elbowed strap handles and other forms like those of the South Italian dolmens (Fig. 112, 3), and Chalcolithic III in South France, but already suggesting developments met in the *terremare*.

¹ The North Italian stamps (*pintadere*) are narrower than the Danubian and Thessalian, but agree in shape with some from IIIrd millennium levels at Gözlu Kale, Cilicia, *AJA.*, XLII (1938), 39, fig. 26.

² Laviosa-Zambotti, *Culture agricole*, 75–89.

³ *Studi Etruschi*, XIII, 50; *BP.*, 1939, 65.

THE BRONZE AGE IN UPPER ITALY

In the Po basin, apart from lake-dwellings of the Lagozza group and presumably Chiozza, the neolithic stage is represented by no connected assemblages of relics. The archaeological record becomes coherent only in the "Aeneolithic Period" of Italian terminology and discloses the Remedello culture fully formed in the Po valley. Extensive cemeteries¹ of contracted or flexed skeletons—117 at Remedello (Brescia), 41 at Cumarola, 36 at Fontanella—sometimes arranged in regular rows, reveal substantial communities occupying the same site for several generations. Metallurgical industry and rudimentary trade were now combined with farming, hunting, and fishing. The copper-smiths produced flat axes, some with notched butts or low hammered flanges (as at Thermi), daggers of two types

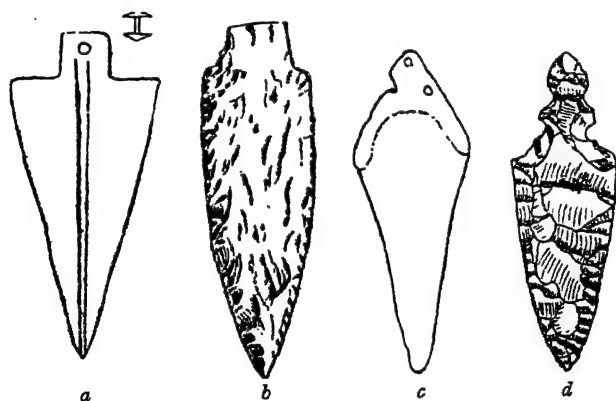


FIG. 116. Copper daggers and flint copies, Remedello ($\frac{1}{2}$).

(Fig. 116) and occasional halberds. The one type of dagger with a tang to which the hilt was attached by rivets with a conical head is clearly a derivative of the Early Minoan group. The other form, kite-shaped, was hafted in the Egyptian manner with a hollow-based hilt held in place by several small rivets (cf. p. 118).

Despite the contemporary exploitation of Tuscan tin suggested by the tanged dagger from Monte Bradoni (p. 235) trade was not regular enough to supply the Remedello smiths

¹ Cf. recent lists, Åberg, *Chronologie*, iii, 8, and van Duhn in *Real.*, s.v. *Italian*.

with material for bronze, and even copper was relatively scarce. So polished stone axes were still used, and tanged, riveted kite-shaped and unriveted West European daggers were each copied locally in flint (Fig. 116). Axes were hafted with the aid of antler sleeves perforated with square-cut holes for the shaft. Still even silver was obtained, perhaps from Sardinia. But the forms produced by the silver-smith suggest more far-flung intercourse. A hammer pin from Remedello itself resembles, but rather remotely, Pontic *yamno* types. A gorget from a tomb at Villafranca near Verona¹ recalls the Irish lunulæ, but also may be compared to a copper gorget from a tomb dated to period III-IV at Velvar in Bohemia. Finally, stone battle-axes, sometimes with knobbed butts,² could be treated as a reflex of intercourse with the copper miners of Upper Austria. And there, in the lake-dwellings of the Mondsee and Attersee, have been found rhomboid daggers of Remedello type and stone axes with notched butt, mistaken by Pittioni³ for prototypes of the copper specimens, but really just copies thereof.

Nevertheless the bulk of the Copper Age relics are native products. Transverse arrow-heads are presumably mesolithic survivals, but the commoner tanged arrow-heads splendidly worked on both faces have nothing in common with earlier industries nor yet with those of South Italy nor the Danube valley. The pottery included vessels with rudimentary thumb-grip or nose-bridge handles in a tradition common to all the mountain lands north of the Mediterranean from Macedonia to Spain (Fig. 117). The skeletons from Remedello comprise Mediterranean long-heads and a minority of round-heads.

Whatever its background, the Remedello culture owes its character partly to a northward extension of intercourse with the Ægean, motivated by the tin lodes of Tuscany and attested there, as in the Po valley, by daggers of Early Minoan type. At the same time contributions by the Bell-beaker folk must be admitted. Bell-beakers were found in three graves in the Province of Brescia, once with a characteristic West European dagger, and stray sherds of the same ware are reported from Remedello itself.⁴ The Bell-beaker folk may

¹ BP., LII, 9 f.; Förssander, *Ostskandinavische*, fig. 10.

² BP., XLI (1915), pl. I.

³ *MAGW.*, LXI (1931), 74-80; p. 290 below.

⁴ Relation to cemetery uncertain, Castillo, *Campaniforme*, 133.

have introduced from the west the halberd and perhaps the gorget and assisted in opening up intercourse with the Danube valley. The battle-axes may well be contributions from Central Europe, perhaps even from farther east, but hardly suffice to prove an intrusion of Battle-axe folk. The daggers of Early Minoan type provide a vague upper limit, somewhere about 2300 B.C., for the beginning of the Remedello culture. Since amber and fayence beads are missing from the graves, the cemeteries had presumably gone out of use before the regular trade between Mycenæ and Bohemia was established about 1600 B.C. The Beaker graves establish a connection with period III in the Danubian sequence, but no one knows whether

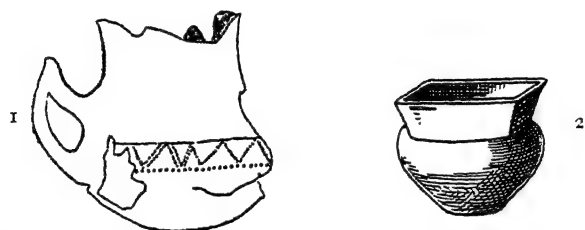


FIG. 117. 1, Vase from lake-dwelling at Polada ($\frac{1}{2}$); 2, Square-mouthed neolithic pot from Arene Candide ($\frac{1}{2}$).

they belong to the beginning or the end of the long phase represented by the Remedello cemetery.

The Bronze Age begins with the extension to Upper Italy of the Danubian commercial system. Types of period IV—flanged axes like Fig. 57, 3, round-heeled and bronze-hilted daggers and ingot-torques—are not uncommon. Many must have been manufactured locally; the bronze-hilted dagger is often regarded as an Italian product. But these types are not found in graves. Most come from hoards (the deposition of which implies still unruly tribal societies), some from pile-dwellings on the Alpine Lakes and from some *terremare*.

The lake-dwellings in question, best represented by Polada on Lago di Garda and concentrated on the eastern lakes adjacent to the Brenner route from Central Europe, are explicitly later than the Lagozza stations of the Western neolithic culture (p. 238). The Polada group¹ is distinguished by cups and other vessels with nose-bridge handles (Fig. 117), that

¹ Laviosa-Zambotti, *Studi Etruschi*, XIII, 50 ff. BP., 1940, 120 ff.

recur at Remedello and in painted ware on the Vibrata (p. 227). Stone was still used for axes, battle-axes, tanged or hollow based arrow-heads, daggers and the armament for wooden jaw-bone sickles,¹ bone and antler for picks and many other implements. Many arrow-shaft straighteners, a few wrist-guards and buttons with V-perforation reveal, like the ceramic designs, the influence of the Beaker-folk, who must have been instrumental in opening up the Brenner trade-route. Flanged axes and round-heeled daggers of bronze and amber beads show that the Polada lake-dwellers benefited from that trade and were living on the lakes in our Period IV. Actually many sites, notably Peschiera, have yielded bronzes typical of Period V too.

South of the Po the celebrated *terremare* are really tells whose true character has been obscured by mythological interpretations of bad observations. Because at a couple of sites excavation revealed a forest of posts preserved in the occupation soil the *terremare* are described as "pile-dwellings on dry land". Imaginative plans, based on immense extrapolations from a few soundings, but confidently reproduced by foreign prehistorians, have depicted the settlements as laid out like an imperial Roman camp. Finally objects collected with an utter disregard for stratigraphy have been lumped together with the foregoing imaginary traits to constitute a "*terramara* culture". Luckily from the data recorded by Coppi at Gorzano, Säflund² has found clues by the aid of which at least two periods may provisionally be distinguished.

Terremare represent settlements, often of considerable size—4 to 18 acres—occupied throughout the Middle and Late Bronze Ages and often in the Early Iron Age too. They therefore imply the same advances in rural economy as do the neolithic tells of Greece and the Balkans and the Bronze Age ones of Hungary. It may not be accidental that about this time we have the first direct evidence for the plough in Upper Italy. On rocks high up in the Italian Alps³ representations of fields and ploughing scenes are carved side by side with halberds and daggers appropriate to period IV.

From their foundation too the *terremaricoli* benefited from the extension of Danubian commerce towards the Ægean.

¹ Preserved complete at Solferino, *BP.*, 1940, 69-73.

² *Le Terremare*, Svenska Institut, Rome, 1939.

³ *Antiquity*, III (1929), 157.

Beads of amber have been found even in the lowest levels of the tells together with flanged axes like Fig. 57, 3 and trilobate pins like Fig. 59, 8. The latter are appropriate to Danubian period IV; the daggers from the same levels would in Central Europe belong to period V, but need not necessarily be derived from that quarter but rather from the Ægean. Hence must come the double spiral pins so popular at this horizon—belated local copies of the Early Helladic—Cycladic type of Fig. 27, 9. Moulds for these earlier types have not been found in the tells. But later, in Säfönd's Terramara II, the villages had accumulated a social surplus sufficient to support a resident smith as moulds for the types appropriate to these levels are not uncommon. Metal had by then become cheap enough to be used even for agricultural implements (flanged sickles like Fig. 115, 5, that are metal versions of the Solferino jaw-bone type), as well as double-edged razors, winged axes, and even swords. From the absence of merchants' hoards containing these types¹ it may perhaps be inferred that some sort of political pacification and unification fostered industry and commerce.

The burnished pots, characteristic already of Terramara I, may be decorated with fluting and big warts but are distinguished above all by the elaborate cornute and other projections to the handle (cf. Fig. 115, 1-2). Such after all are only extravagant versions of traits already encountered earlier all along the eastern side of the peninsula and foreshadowed on the other side of the Adriatic too. Nor are they confined to the *terremare* since they occur in simple hut villages. The latter may be supposed to belong to less progressive or less fortunate communities who had failed to adopt the agricultural techniques that made permanent settlement possible, without assuming a distinct people of *extraterramaricoli* as Rellini does.

Accordingly no immigration need be postulated to account for the *terremare*—no "prototerramara culture" has been found outside Italy from which should spring all the distinctive elements of the *terremare*. They are adequately explained by the agricultural reformation, that may well have been inspired from the south-east, by the development of industry and commerce that it supported, and by the extension of the amber

¹ Åberg, *Chronologie*, III, 97.

trade to Mycenæ and Knossos. And the same explanation applies to Taranto too. Now the metal types, found there in the layer below that containing imported Mycenæan sherds and figurines, are those belonging to Terramara II in the Po valley. Hence the foundation of the North Italian settlements should go back to 1500 or even the Shaft Grave epoch. On the other hand a celebrated iron sword, bearing the cartouche of Pharaoh Seti II (who died in 1198 B.C.), resembles Italian weapons proper to Terramara II¹ rather than the Central



FIG. 118. *Terramara* dagger and Peschiera safety-pin ($\frac{1}{2}$).

European flange-hilted swords of the Late Bronze Age—period VI. Hence while the dating of *Terramara* II, the full Middle Bronze Age, is confirmed, the Seti II sword no longer provides an argument for dating the Late Bronze Age, to which flange-hilted swords belong, before 1200².

¹ Sâflund, op. cit., p. 157, n. 1.

² Cremation is traditionally reckoned as a trait of "the terramara culture", but Sâflund has shown that there is no proof that the urnfields discovered near some settlements actually contain the ashes of their Middle Bronze Age occupants. The necropoles are more probably late Bronze Age and for them the Swedish author has created a phase *Terramara* II B, distinguishable typologically, but not yet stratigraphically, in the ceramic material.

CHAPTER XIV

ISLAND CIVILIZATIONS IN THE WESTERN MEDITERRANEAN

It is possible to sail coastwise from the Ægean to Italy and Sicily without ever losing sight of land. Progress thence westward meant embarking on the pathless ocean without any guiding point in the heavens like the Pole Star, by which a mariner might set his course.¹ Sicily must have set a bound to regular intercourse between the Ægean and the western world in so far as such intercourse depended on following the northern shores of the Mediterranean. Land routes across North Africa and even coastal routes along the inhospitable southern shores of the Mediterranean were of course available, however difficult they may have been. But they traversed territories so little explored archæologically that the effect of communications along them can hardly be even inferred. We can therefore scarcely expect to find the West Mediterranean islands clearly revealed in the archæological record as stepping stones in the transmission of culture wholes from East to West, nor to be able adequately to assess the part they may have played in transmission from Africa northward.

THE MEGALITHIC CIVILIZATION OF MALTA

The barren little islands of Malta and Gozo are last remnants of a land-bridge from Africa to Europe and offer natural havens to mariners blown by mischance or groping their way deliberately westward from the East Mediterranean. They were unsuited to Old Stone Age hunters, and, save for a questionable Neandertaler, were uninhabited thereby. In the Holocene they supported a surprisingly dense population of farmers who developed in relative isolation a vigorous insular culture.²

Its most enduring and distinctive monuments are megalithic "temples", built of really gigantic stones, and

¹ L. Hogben, *Science for the Citizen*, 106.

² The best collection of illustrations and plans of Maltese monuments and relics is L. M. Ugolini, *Malta : Origini della Civiltà Mediterranea*, Rome, 1934, but the views expressed there are scarcely plausible. Latest summary, de Manneville, *CIPMO*, 36-41.

labyrinthine burial vaults ingeniously carved out of the limestone with stone tools. And so to-day the most truly native monument of Maltese culture in the twentieth century A.D. is the village church of Musta, near Valetta, roofed with a dome larger than that of St. Paul's Cathedral. Like it, the neolithic temples and tombs are eloquent of a devotion to immaterial ends which inspired the island farmers to produce a surplus above immediate needs. And they suggest how

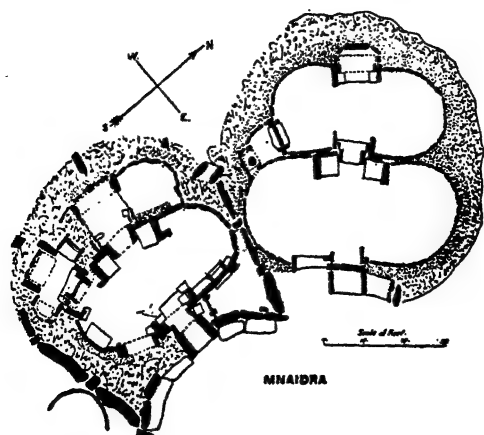


FIG. 119. Plan of "Temples" at Mnajdra, Malta.

"circulation" of this surplus wealth was effected through unproductive works, that, just because they were unproductive, could be repeated again and again.

The temples,¹ though reconstructed several times, preserve throughout a continuity of plan in which an apsidal shrine is the principal recurrent feature. Community of tradition between this temple architecture and the sepulchral architecture of West European collective tombs² is revealed in many details of plan and construction—semicircular forecourts in front of the shrines; the deliberate use of enormous blocks; porthole slabs used for doorways; roofing of the apses by corbelling³; walls in which uprights set with their broad faces

¹ T. Zammit, *Prehistoric Malta, The Tarscien Temples*, Oxford, 1930, gives an account of the excavations at Hal Tarxien.

² Leeds in *LAAA.*, IX (1922), 35; Hawkes, *Foundations*, 153.

³ T. Zammit, *The Neolithic Temples of Hajar Kim and Mnajdra*, Valetta, 1927, 9 and 28.

in line with the wall alternate with slabs projecting at right angles thereto¹; cup-marks on many stones. The stones, at least in the later shrines, are generally beautifully dressed with stone hammers, or even ornamentally pitted. Some are carved in low relief with spirals or even processions of men and animals. Cult objects include limestone statuettes² a foot or more in height of an obese female personage, standing, seated, or lying on a couch and sometimes wearing a skirt recalling Minoan and even Sumerian fashions, as well as aniconic symbols—betyls, bells, altars.

Bones of the dead were conserved in simple rock-cut tombs or megalithic chambers. But at Hal Saflieni, near Valetta, a vast and complicated hypogæum has been quarried in the living rock reproducing several features of the temple architecture and decorated with spirals painted on the ceiling.

The minor crafts of the islands were no less highly specialized than architecture. Twenty-six varieties of pottery were distinguishable at Hal Saflieni.³ Technically the commonest fabric—a fine polished grey ware—is strongly reminiscent of the neolithic pottery of Syria-Palestine and of Crete (p. 17). Forms such as carinated bowls and cups and bottles point in the same direction, and some of the finely incised patterns would not be out of place in the neolithic layers at Knossos. But decoration by means of small applied clay discs (studded ware) has no obvious East Mediterranean affinities; the spirals incised on some vases might be Danubian or Middle Minoan, but have nothing to do with the early East Mediterranean fabrics. And there are rare, and perhaps relatively late, vases of buff clay painted⁴ with geometric designs in matt red that are only in the vaguest way East Mediterranean.

Two types of handle are distinctive of all the "neolithic" wares. The tunnel handle is a tube of clay applied horizontally to the inner wall of the vase, the contours of which are interrupted externally only by the two apertures corresponding

¹ Ibid., 13; the resultant effect is that of the "recessed brick" architecture of Sumer and Egypt.

² *JRAI.*, LIV, 67 ff.; *IPEK.*, 1927, 131. An idol from Tarxien must have stood 1.30 m. high.

³ *LAAA.*, III (1910), 1-22.

⁴ *LAAA.*, IV (1911), 121-6; *Bulletin of Museum, Valetta*, I (1929), 25.

to the tube's ends. Such handles recur also in Sardinia, perhaps in a pre-Beaker context; the subcutaneous handles of the Italian Copper Age and the Danubian III Baden complex offer more distant analogies since the tubes are narrower and normally vertical. The triangular or nose-bridge handle is formed of two bands of clay projecting from the vase wall and set, one horizontal, the other oblique, so that they meet at a sharp angle. Though the thumb-grip is exceptional, such handles embody the same tradition as has already met us north of the Mediterranean in Macedonia and Upper Italy (p. 84).

Vessels were also made of stone with great dexterity and may be fitted with both types of handles used by the potter. A giant cup from Hajar Kim, is 6 ft. in diameter and equipped with a carved nose-bridge handle.

This remarkable culture was formally neolithic. Perforated stone implements are indeed absent, polished stone axes are rare, but rough stone celts, mauls, picks, and flint or chert flakes and scrapers are very abundant, and grooved stone hammers, such as occur in many ancient mines and were employed by Moravian bronze-smiths during period IV, also occur. Not a scrap of metal has been found, and the quarrying, dressing and carving of stone have demonstrably been carried out with stone tools. The islanders, possessing no ores nor natural products that could be easily bartered therefor, made shift successfully with local materials for industrial purposes. But they did import obsidian, Sicilian lava for querns and for superstitious ends fine-grained rock pebbles. From these they made axe-amulets, and occasional dove- and other pendants all of which had been included in the prophylactic equipment of Western Asia from the fourth millennium. The only manufactured commodity recognized as an import in Malta is a bossed bone plaque of Troadic-Siculan I type, like Fig. III, from Hal Tarxien.

Such isolation from trade makes the dating of Maltese neolithic culture almost impossible. The bossed bone plaque proves indeed that it was flourishing during the Siculan I Copper Age and during the life of city II, III or IV at Troy. "Anchor-ornaments" of Helladic-Macedonian type would fit into the same context, but those found in Malta¹ may belong

¹ Murray, *Excavations in Malta*, II (1925), 29.

to the "Bronze Age" rather than the "neolithic" horizon. Evans' ¹ detailed comparisons of the spirals on "neolithic" pots, tomb-roofs and temple walls with Middle Minoan II patterns lead to a similar conclusion. A button with V perforation from Hal Saflieni again is a type appearing first in period III of the Danube series. At least on the short chronology the insular neolithic period coincides in part with the second millennium B.C. That gives no direct clue whatever to its beginnings. The oriental prototypes for many Maltese devices can be traced back to the fourth millennium.

Nor is the end of the neolithic age better defined. It may be taken as coinciding with an invasion or religious revolution. As a result of this the temple-complex of Hal Tarxien was diverted from its primary use, and part was made a cemetery for cremation burials. With these were deposited archaic little triangular daggers and flat or even hammer-flanged axes of bronze or copper,² curious figurines,³ and pottery in an absolutely new tradition.

Within the ambit of the Ægean commercial system such bronzes could not be expected much after 2000 B.C., in the Danubian province hardly later than 1500. But they can be paralleled in Sardinian hoards of the first millennium. The pottery includes vases with oculi-ornaments,⁴ handled mugs and askoi that in the East Mediterranean would go back to the third millennium. But in Sardinia and even Italy equally archaic "Ægeanizing" forms reappear in the Dark Age after 1200 B.C.⁵ And there are plenty of two-storeyed urns ⁶ recalling in structure Italian Iron Age types and contemporary Sardinian vases,⁷ though anticipated even in the neolithic wares. The "Bronze Age" invasion of Malta can accordingly be placed anywhere between 1800 and 800 B.C. No convincing grounds can be advanced for preferring one or other limit. It is more honest to admit that the age of the several Maltese cultures, and

¹ *P. of M.*, II, 182-9.

² M. A. Murray, *Corpus of Bronze Age Pottery of Malta*, London, 1934, pl. VI.

³ Murray, *Corpus*, pl. XI; the nearest analogies come from Middle Bronze Age sites in the Danube valley, Hoernes-Menghin, *Urgeschichte der bildenden Kunst*, 411.

⁴ Murray, *Corpus*, pls. XII, 1; XXVIII, 7.

⁵ e.g. *M.A.*, XXV, pl. VIII, 74; *Not. Sc.*, 1888, pl. XV, 2; *Studi Etruschi*, III (1929), 21 ff.

⁶ Murray, *Corpus*, XXVIII, 3; XXXI, 12; XXXIII, 3.

⁷ *BP.*, XXIV (1898), 253 ff.

consequently Malta's rôle in prehistoric Europe, cannot be correctly estimated on the available evidence.

SARDINIA

Sardinia, though apparently uninhabited in the Old Stone Age, is large enough despite its mountainous character to support numerous, if mutually isolated, farming communities in its valleys and plains. Moreover it possesses natural resources—obsidian, copper and silver—to attract industrial colonists. When the archæological record opens clearly, all these opportunities were already being exploited. The evidence is derived in the main from natural caves and rock-cut tombs used as collective sepulchres for many generations. Relics of different periods accordingly occur generally mixed together.

Only in the cave of San Bartolomeo ¹ near Cagliari in the south of the island is a stratigraphical separation possible. In an upper layer here the grave goods comprised Beakers, tripod bowls decorated in Beaker style (Fig. 121, 1), West European daggers and a flat axe of copper, and a prismatic V-perforated bone plaque—in fact a typical “Copper Age” assemblage. Below and separated by a layer of stones from the “Copper Age” burials was an earlier funerary deposit comprising as well as skeletons, simple obsidian implements and hemispherical and carinated bowls, one adorned with a stellate pattern of finely incised hatched ribbons. Technically the last-named vase recalls some vessels from Villafrati in Sicily, from Hal Safieni in Malta, and from pre-Beaker horizons in South France. The pottery from the sepulchral cave of San Michele (Ozieri) ² includes vessels of the same type, but others with tunnel-handles quite like the Maltese but decorated with semi-circles executed in cardial and stab-and-drag technique that is represented at San Bartolomeo only in the upper level.

Sardinian culture of Beaker and post-Beaker age is better represented by the rock-cut tombs, locally termed *domus di gianas*. Some of these family vaults may have been dug even in pre-Beaker times, since sherds of the incised fabrics represented in the lower level at San Bartolomeo occur in them, but others were excavated, or in any case still used, in the first millennium

¹ BP., XXIV (1898), 253 ff.

² BP., XLI, 102 ff.

B.C. Generally the tombs are isolated or grouped in twos or threes, but at Anghelu Ruju,¹ a cemetery of no less than thirty-one chamber-tombs has been systematically explored. The burial chambers here tend to a rectangular plan, are often preceded by an antechamber and entered either by a stepped pit or a passage. Subsidiary chambers may open off the principal compartment. The inner portals may be carved to suggest a lintelled wooden doorway like the façades of Early Cypriote tombs.² In two cases rock pillars were left standing

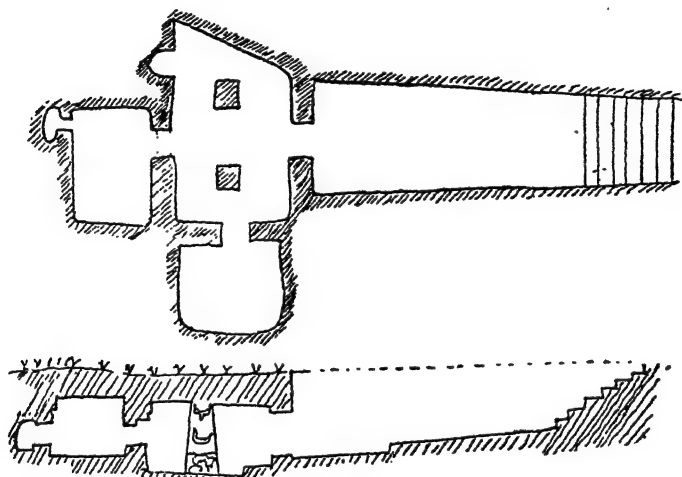


FIG. 120. Plan and elevation of tomb XXbis at Anghelu Ruju.

in the chamber. On such pillars and on the walls bulls' heads or high-prowed ships have been carved in low relief (Fig. 120). Traces of red ochre were found on the floors of two tombs. Normally the bodies were buried in the contracted attitude, but in two tombs (XV and XXbis) cremated remains were found in small niches and in tomb XX a baby's skeleton in a jar.

A series of intermediate forms leads from the subterranean *domus di gianas* (Witches' Houses) to the megalithic tombs built above ground and termed locally *tombe di giganti* (Giants' Tombs)—rock-cut tombs roofed by corbelling in megalithic style,³ megalithic extensions built on in front of rock-cut

¹ *Not. Sc.*, 1904, 305 ff.; *MA.*, XIX, 409 ff.

² *Antiquity*, XIII (1939), 461-3.

³ *BSR.*, V (1910), 103, fig. 5.

tombs,¹ a *domus di gianas* with the rock-face above and around the entrance carved to reproduce the portal and forecourt of a Giants' Tomb.² Similarly Mackenzie³ has constructed a typological series leading from simple "dolmens" to the classical Giants' Tomb—a long narrow gallery walled with megalithic slabs, roofed by corbelling, covered by a cairn enclosed by masonry walls and entered through a low arch cut in a tall upright slab or stele from a semicircular space flanked by masonry walls (Fig. 106). Of course such a series can be reversed as it is a pure *a priori* construction and unsupported by a reliable series of closed grave finds. The so-called "dolmens" have yielded no datable furniture.



FIG 121. Tripod bowl, San Bartolomeo ($\frac{1}{2}$), and vase-handle of nose-bridge type, Anghelu Ruju ($\frac{1}{2}$).

Some are just remnants of Giants' Tombs.⁴ The distribution of the latter does not agree so exactly with that of the *nuraghe* as to prove contemporaneity.⁵ Nuragic and even Roman⁶ relics have been found in Giants' Tombs. But of course such finds do not establish erection in the Iron or Late Bronze Age.

The grave-goods recovered at Anghelu Ruju give the best available picture of Sardinian culture before the nuragic age, though tomb-robbing in antiquity has stripped that picture of any pretence at being complete. Metal was used, but apparently only sparingly; only two or three West European daggers, one flat axe, one arrow-head, several quadrangular awls, some beads, bracelets and atypical pins of copper and olive-shaped beads and a ring of silver have escaped the ancient plunderers. Martial activities are indicated by numerous weapons—

¹ Taramelli, *Il Convegno archeologico sardo*, fig. 65.

² Taramelli, *Il Convegno archeologico sardo*, fig. 66; *BSR.*, V, pl. IX, 1.

³ *BSR.*, VI (1913), 67; *BP.*, XLI, 15.

⁴ *Antiquity*, XIII (1939), 376-7.

⁵ *Rivista*, XX, 6 ff.; *BSR.*, V, 135.

⁶ *MA.*, XI, 268; *Not. Sc.*, 1933, 360.

the copper daggers, spheriod mace-heads of stone, arrow-heads (triangular, tanged, tanged-and-barbed, and even serrated) of flint together with wrist-guards (these, however, having for the most part only two perforations, may have been used as whet-stones as in Crete) and an arrow-straightener of pumice. In the pottery we might distinguish: (i) carinated vases, and cylindrical pyxides, vaguely Ægean in form; (ii) vessels decorated with semicircles and other patterns formed either of (a) finely incised hatched ribbons or of (b) stab-and-drag lines; (iii) Bell-beakers and tripod bowls like Fig. 121, 1; (iv) carinated cups and other vessels with nose-bridge handles (Fig. 121, 2), which persist into the Nuragic age.

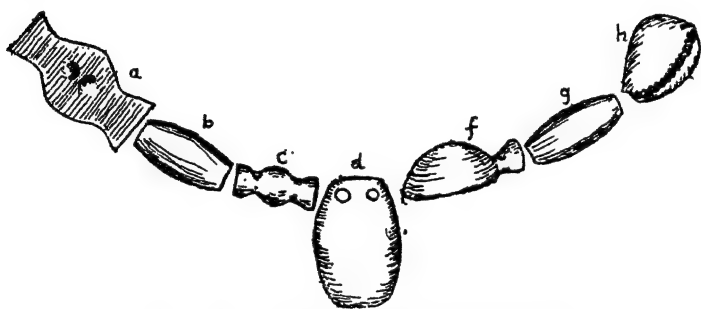


FIG. 122. Necklace from Anghelu Ruju (§).

As ornaments and charms, stone bracelets and rings, axe-amulets, disc-beads of shell, and half-spool shaped beads (Fig. 122, a, c, f) and conical buttons with V perforations were worn. Finally three tombs contained marble idols, which, although made of local stone, look like deliberate imitations of Early Cycladic models.

Plainly many streams have converged in the Copper Age culture of Anghelu Ruju. Its debt to Crete was admirably summarized by Patroni¹: "Not only the form of the tombs but also the shape and decoration of some of the vases in them recur in Crete. The symbols sculptured on the walls and the statuettes of marble show relations of a nature superior to any external relations of commerce; for they denote a profound affinity of thought and culture." Giuffridi-Ruggieri adds anthropological arguments. Noting that fifty-three skulls

¹ Quoted by Giuffridi-Ruggieri in *Archivo per Antrop. ed Etnogr.*, XLVI, 18.

from Anghelu Ruju were long-headed and ten round, and that a similar mixture is detectable in Crete, he concludes that Sardinia was invaded at the end of the third millennium by a mixed race of Cretans. The invaders, combined with some small pre-existing population also of Mediterranean stock, created the Copper and Bronze Age civilizations of Sardinia.

If Giuffridi-Ruggieri be right, the finely incised wares of our group (ii) might be taken as representative of the "pre-existing population". These fabrics are certainly related to those of Malta, North Africa, Sicily on the one hand, of South France on the other. Their origin is not thereby determined. The Beaker-folk's effective contribution is demonstrated by their pottery, armament, and ornaments. Some beakers from Anghelu Ruju resemble especially those from Almeria, but one is almost identical with specimens from Bohemia and Denmark.¹ The arrow-straightener, too, though locally made, is a Central European trait in the West Mediterranean. But a beaker from a rock-cut tomb at Cuguttu² has a rudimentary thumb-grip handle.

This and related nose-bridge handles and many other traits, especially the V-perforated half-spool beads and prism-shaped buttons, betoken particularly intimate relations with Catalonia and South France. In South France such handles belong to a horizon explicitly later than wares like our group (ii) and on the whole post-Beaker (p. 300). In Sardinia they persist into the nuragic age.

Despite the industrial development and wide cultural relations attested at Anghelu Ruju no urban civilization arose, and Sardinia held aloof from any comprehensive system of foreign commerce that might bring datable foreign manufactures into the archaeological record. Judging by sepulchral architecture, island culture developed insensibly into the extremely insular Nuragic phase. This development did not take place without renewed contact with the East Mediterranean. A Cypro-Mycenæan copper ingot stamped with Mycenæan letters was found on the island. About 1100 B.C. maritime raiders, termed Sh'rd'n' appear in the Egyptian records. They are depicted protected by horned helmets and round shields and armed with swords precisely like those of bronze statuettes from the Sardinian *nuraghe*. Whether the

¹ Nordmann, "Megalithic," p. 122.

² *Not. Sc.*, 1909, 103.

Shardana originated in Asia Minor, like the Etruscans, and only settled in the Western Mediterranean after raiding Egypt,¹ or were actual descendants of the Copper Age Sardinians,² their connection with the island in its nuragic age is indisputable, as is the stimulus given to West Mediterranean development by their experiences in the East.

But the result was not the establishment of a city-state organization such as the Etruscans created. In the island the highest social unit was a cluster of round huts sheltering beneath the dry-stone tower—*nuraghi*—of the clan chief. Architecturally as well as sociologically these complexes are significantly like a modern Nigerian village.³ Mines and smelting furnaces, as well as many hoards, belonging mostly to founders, disclose indeed an active and efficient metallurgical industry. The variety of types comprised in the hoards would suggest trade with, or raids on, both the Ægean (double-axes, axe-adzes) and Atlantic coasts (double-eared palstavs, carp's tongue swords). But the island industry was extraordinarily conservative. Hoards of nuragic age may contain every sort of axe⁴ from flat or flanged types assignable by typologists to the Copper or Early Bronze Age, up to socketed forms of the Late Bronze Age and of stabbing weapons from archaic round-heeled daggers⁵ to flange-hilted swords. Luckily a few imported manufactures prove that these archaic types were still current in the eighth or even seventh century B.C., when the Etruscan Iron Age was in full bloom in Italy.⁶

Yet the nuragic bronzes appear in the archæological record as the immediate successors of the Copper Age types just as nuragic pottery occurs already in the rock-cut tombs of Anghelu Ruju itself. We have unconsciously overstepped the chronological boundaries of this book. The excursus demonstrates how dangerous it would be to apply to the West Mediterranean typological systems that may work well within the Danubian and British commercial spheres and how difficult it is to fill with developments in tools and vessels, weapons and

¹ So Hall, *Cambridge Ancient History*, II, 282.

² *BP.*, XXXIX, 100; *MA.*, XXV, 896; *Archivio*, XLVI (1916), 9; *RM.*, XIII (1928), 74.

³ Bosch-Gimpera, *Etnologia*, 194.

⁴ e.g. at Monte Sa'Idda, *MA.*, XXVII, 14 ff.

⁵ At Monte Sa'Idda and Alà dei Sardi, *Not. Sc.*, 1925, 466.

⁶ *Not. Sc.*, 1922, 293; 1926, 274; cf. Bosch-Gimpera in *CIPMO.*, 30 f.; *Studi Etruschi*, III, 20.

tombs any vast interval between the prehistoric Copper Age or Beaker period and the proto-historic Bronze Age of the eighth century B.C. Archæologically a millennium is not very plausible, two quite incredible.

THE BALEARIC ISLANDS

In the Balearic Islands the archæological record begins with the megalithic culture. In Mallorca the normal family vault was a rock-cut tomb.¹ The chamber (Fig. 105) takes the form of a long narrow gallery round which runs a shallow bench divided into several stalls by low ridges of rock. One or more cells may open off the chamber, and it may be preceded by an antechamber. The entrance is a low arch or window cut in the rock and may give on to an uncovered forecourt excavated in the hill-side. In Menorca the form of the underground gallery is reproduced above ground in megalithic chambers enclosed in boat-shaped constructions walled with cyclopean masonry and termed *navetas*. The end at which the chamber opens is flattened and sometimes even concave in plan.²

Evidence of early contact between the islands and the Ægean is afforded only by a matt-painted beaked jug of Middle Cycladic type, certainly an import but found without definite context on Iviza. Otherwise the earliest contacts with the outer world are provided by a single sherd of Beaker ware³ from the rock-cut tomb of Felanitx, and a conical button with V perforation from the tomb of Son Mulet. Both are indicative of the activities of Beaker-folk on Mallorca. On the other hand splay-footed vases, typical of the Horgen culture, from a rock-cut tomb at Sa Val⁴ prove connections northwards as do the similarities of the Balearic tomb plans to those of the Rhône and Seine valleys.

The bulk of the sepulchral pottery from the rock-cut tombs, however, consists of plain vases sometimes provided with upstanding lugs but never with true handles. Technically this fabric resembles the Argaric ware of the East Spanish Bronze Age, and several forms can be matched in the same

¹ *Arch.*, LXXVI, 121 ff.; *Ant. J.*, XIII (1933), 33 f.; *CAS.*, 113.

² *CIPMO*, 26.

³ Castillo, *Campaniforme*, 125; *CIPMO.*, pl. II.

⁴ In museum at Palma unpublished before the rebellion.

context. But simple round-bottomed and carinated vessels preserve the traditions of the oldest West European neolithic ceramics.

Little metal survives among the grave goods. Round-heeled daggers of "Early Bronze Age" type were recovered from Sa Val and several other tombs,¹ but one tomb yielded an identically shaped dagger of iron!

Indeed the cultural history of the Balears is parallel to that of Sardinia. There is no obvious break between the "Copper Age" culture represented in the rock-cut tombs and that represented in the "talayots". The latter are fortified hamlets, counterparts of the Sardinian nuragic settlements, and like these, the talayots² continued to be inhabited into the Iron Age. As in Sardinia the archæological material from the Balearic Isles does not show sufficient typological development to justify a very high dating for the local megalithic culture. If, like Hemp,³ we treat the Mallorcan rock-cut tombs as the starting point for the French series of gallery graves, we must here confess that no valid objections to a reversal of the relation could be based on the relics from the island's tombs or the chronology deduced therefrom.

¹ *Ant. J.*, XIII, 35, 39; *CIPMO.*, pl. III.

² So the axes of the Talayot-culture include both flat and socketed forms, *CIPMO.*, 21.

³ *PPS.*, I (1935), 110.

CHAPTER XV

THE IBERIAN PENINSULA

THE Iberian Peninsula ¹ offers the most natural route by which Oriental influences transmitted by land across North Africa or coastwise along the southern shores of the Mediterranean, could percolate into Europe. And accordingly they should be more tangible there than on the West Mediterranean islands. On the other hand a relatively large indigenous population survived from the Old Stone Age and might be expected to mould to its own traditions East Mediterranean contributions received through Africa. But that population was itself largely African in culture; the South-east Spanish rock-paintings, the persistence of which into the Copper Age provides one proof of the survival of palæolithic traditions, have notoriously affinities in Africa rather than in the rest of Europe. Flint-work points in the same way; the Solutrean of Almeria and Valencia turns out to link on to the Atérian of North Africa as closely as to the Solutrean of France and Central Europe ²; the "mesolithic" microliths are admittedly derivatives from the African Capsian. The impact of Oriental ideas and economic devices on these residual food-gatherers produced varied and vigorous local cultures.

Unfortunately few of their monuments have been explored in a really scientific manner. The bizarre relics are mostly derived from collective tombs used for many generations or from towns, occupied no less long but never stratified like tells; they cannot be classified on the basis of successions of superimposed burials or habitations. The culture sequence has to be deduced by typological studies uncontrolled either by

¹ GENERAL ACCOUNTS:

Nils Åberg, *La civilisation énéolithique dans la Péninsule ibérique*, Uppsala, 1921 (to be used where other references are not given).

Cartailhac, E., *Les Âges préhistoriques de l'Espagne et du Portugal*, Paris, 1886.

Bosch-Gimpera, *Etnologia de la Península ibérica*, Barcelona, 1932. (Contains good illustrations, but the Spanish text is extremely speculative.) In all cases reference to the original reports is essential.

² The Solutréan (including tanged-and-barbed arrow-heads) was found stratified between two "Gravettian" layers. Pericot Garcia, *La Cueva del Parpalló* (Madrid, 1942), esp. p. 316.

stratigraphy or closed finds containing reliably dated imports. The direction of the typological series can therefore be determined only by *a priori* principles. In accordance with the general outlook of this book, a diffusionist interpretation is adopted, and many series are presented as illustrating progressive cultural degradation. Adopting a purely evolutionary standpoint Bosch-Gimpera¹ has worked out in detail a more or less consistent picture of cultural development diametrically opposed to that here presented. On several points his conclusions seem, however, to conflict with stratigraphical data from related areas, particularly from South France.

NEOLITHIC CULTURES

Only in Almeria is a reasonably complete culture sequence accepted by general agreement, and only there do we encounter a "neolithic" phase unsuspected of any taint of later admixture. And Prof. Bosch-Gimpera himself admits that in Almeria food-production and the associated arts were introduced by colonists from overseas. Indeed the coastal plains are where reflections of Oriental advances should first be expected.

The neolithic colonists settled generally on hill-tops like the type site, El Garcel,² overlooking the fertile valleys; they arrived at a time when pines still grew on the now treeless hill. In addition to breeding stock and cultivating cereals they may have introduced the culture of olive-trees since olive stones were found, but grape-seeds are said to be derived from wild vines.³ The grains were reaped with sickles armed with serrated flint teeth, like those from the pre-dynastic Fayum, stored in subterranean silos and ground on saddle-querns. Tied to the soil by their fruit trees, the villagers lived in round or oval huts, partly excavated in the soil but roofed with a superstructure of wattle-and-daub. Huntsmen still used transverse arrow-heads—micro-gravers⁴ found at El Garcel may be by-products in the manufacture of these.

¹ Summarized in *Real.*, s.v., "Pyrenäenhalbinsel," and more recently in *La Formacion de los Pueblos de España*, Mexico, 1945.

² Siret, *RQS.*, XXXIV (1893), 489 ff., and *Les premiers Ages du métal dans le sud-est de l'Espagne*.

³ Siret, *Questions de chronologie et d'ethnographie ibériques*, Paris, 1913.

⁴ Micro-gravers occur also in the "néolithique de tradition capsienne" of North Africa; Vaufray, *BSPF.*, XXXIII (1936), 631.

Carpenters employed ground stone axes, adzes, and gouges. A textile industry is implied by biconical whorls. Pottery was undecorated and vases were never provided with true handles though singly or even doubly perforated lugs were applied. Forms include jars with pointed bases (Fig. 123, 3) like the early Egyptian (Gerzean) and North African,¹ curious bottles, oval in plan, that also recur in North Africa and sack-like leathery vessels related to the neolithic pottery of the Fayum and

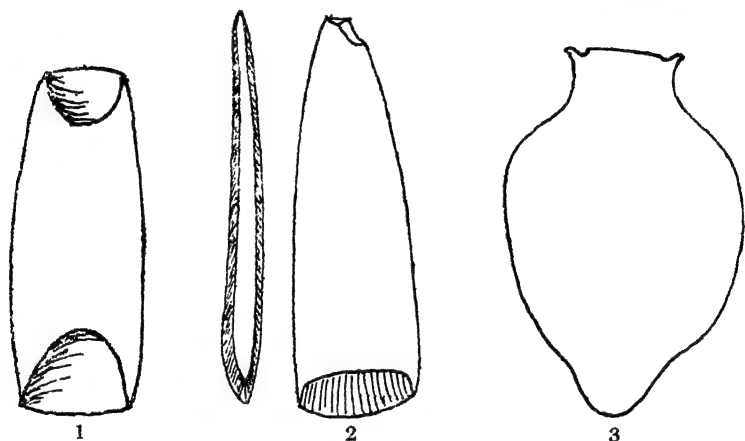


FIG. 123. 1, Gouge, El Garcel ($\frac{1}{2}$); 2, Schist adze, Portugal ($\frac{1}{2}$); 3, Jar, El Garcel ($\frac{1}{2}$).

Merimde² in Egypt. The leathery sack-like forms continued to be popular in all later phases of Almerian culture. In Siret's second neolithic phase as represented at Tres Cabezos³ they are provided with upstanding perforated lugs (Fig. 126, 1), while bowls may be carinated, and even double-vases were made as at Merimde in Egypt. Vessels were also woven of esparto grass.

Disc-beads of shell, made also by African Capsians, and bracelets of *Pectunculus*⁴ shell and stone, beads of callaïs and later of steatite were worn as ornaments. The dead were buried collectively in natural cave ossuaries or in stone-walled

¹ BSPF., XXXIII, 633; *Rev. Anthr.*, XLI (1931), 158, fig. 1, 4.

² Caton-Thompson, *The Desert Fayum*; Childe, *NLMAE.*, 58.

³ Siret, *Âges du métal*, pl. 3; segmented bone beads, a clay plaque perforated at the four corners and a heap of ore suggest that this site should be assigned rather to the Copper Age.

⁴ Siret, *Questions*, 38; *Archivo de Prehistoria Levantina*, I (Valencia, 1928), 25.

"cists", usually circular.¹ A crude fiddle-shaped figurine of stone, like Fig. 8, 14, from El Garcol is supposed to represent the East Mediterranean "Mother Goddess".

A culture, chronologically as well as morphologically neolithic, is at present distinguishable only in South-East Spain. But all over the Peninsula inhabited and sepulchral caves have yielded material that is formally neolithic. On the cave walls and in adjacent shelters their inhabitants have painted in a conventional manner wild animals and episodes of the chase, but also domestic cattle, sheep, goats, swine, and

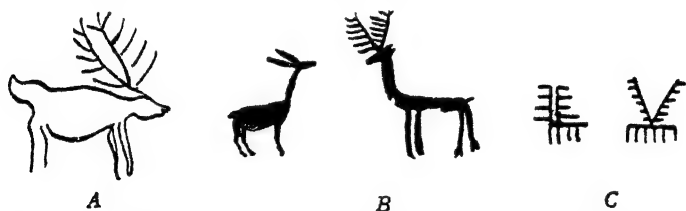


FIG. 124. Stages in conventionalization of parietal art in Spain. After Obermaier. A, Maimon; B, Figuras; C, La Pileta.

equids (? horses), and pastoral scenes and even an agricultural deity holding a sickle; sledges and, in the north, wheeled carts, are also depicted.² Such rock-shelter paintings extend beyond the Peninsula round the northern side of the Mediterranean even east of the Rhone.³ The least conventionalized paintings, found mainly in the south of the Peninsula can be derived from the lively "South-East Spanish" group of early mesolithic art.⁴ Presumably their authors were descendants of the older hunters. Representations of the Almerians' idols and of the owls' faces that recur on Copper Age vases and tomb walls show the source of the domestic stock, the sickles and other "neolithic" traits in the cave culture. These signs, representations of copper daggers and agreements between the parietal art and the ceramic art of Los Millares (Fig. 126) at the same time prove that most settlements date from the Copper Age.

On the other hand the richly incised cave pottery differentiates its makers from the Almerians. Bosch-Gimpera

¹ Leisner in *Arqueologia e História*, I (Lisbon, 1945), 13-15.

² Breuil, *Les Peintures rupestres schématiques de la Péninsule ibérique* (Paris, 1936), IV, 148-150.

³ *BSPF.*, XLI (1944), 168.

⁴ Formerly classified as Upper Palaeolithic; cf. Pericot, *Parpalló*, 344-5.

accordingly treats the cave pottery as the hall-mark of a distinct cycle of culture, which he claims goes back to the same early neolithic times as El Garcel. But he is forced to admit ¹ that "a neolithic facies can only be deduced from the typology of ceramic decoration". However, in Catalonia plain "Western" pots (like Fig. 132)² have been found stratified below Beaker pottery, just as in South France, and similar Western vases occur also in Portugal at Casa da Moura. Generally decorated Cave pottery is confused with Beaker ware and Copper Age relics. But one variety at least occurs, stratified below, and therefore before, Beakers and the first copper objects ³ in Catalonia. This is the "Cardial pottery", profusely ornamented with shell impressions. In the Peninsula it is commonest in the caves of Valencia ⁴ and Catalonia ⁵ but occurs even in Portugal.⁶ Its designs are identical with those on vases from the cave of Achakar, C. Spatel (Morocco) ⁷ which were associated with vases of early Almerian form. We have already encountered parallels in Liguria and South Italy. Semicircles, channelled as in South France and Crete, or milled with a shell edge as in Sardinia, have been found in caves (including Casa da Moura),⁸ scattered all over the Peninsula. The motive and technique are Early Minoan in Crete and are presumably early in the Peninsula too. On the other hand cordon-ornamented wares, also widespread in the Peninsula, are demonstrably post-Beaker in Catalonia,⁹ just as they are mainly "Bronze Age" in Italy.

So, as in Liguria, the caves contain the relics of poor societies, or fragments of societies, relying largely on hunting, collecting, and stock-breeding. In search of fresh pastures for stock and in pursuit of game, such groups might wander far and maintain spasmodic intercourse with one another. So they might come to form a continuum from Gibraltar to Liguria. They would have opportunities of borrowing cultural devices from other communities, more settled and progressive, and diffusing

¹ *Real.*, X, 352.

² *Ampurias*, VI (Barcelona, 1944) 43-58.

³ *Anuari*, VIII (1936), 19 ff.

⁴ *APL.*, I, 87 ff.

⁵ Colomines Roca, *Prehistoria de Montserrat*, Barcelona, 1925.

⁶ *Actas y Memorias*, XVII (1942), 107.

⁷ *Rev. Anthr.*, XLI, 158.

⁸ *Arch. J.*, XCV, 132, 133, 136.

⁹ *Ampurias*, VI, 43, 58.

such acquisitions. They were presumably the principal agents in transmitting to the megalith-builders of the Copper Age artistic traditions inherited from palæolithic times. But beyond this the material from Iberia provides no reliable data for determining either the origin of the cave populations nor yet the chronological limits of their neolithic culture. But perhaps the African affinities of the cave dwellers were mainly coastal and could be described as Hispano-Mauretanian.

THE COPPER AGE

Almeria is rich in copper, silver, lead and other minerals. These natural resources permitted the rise of a new economy in which industry and trade could absorb surplus rural population as in the East Mediterranean. The type station, Los Millares,¹ a few miles up the Andorax from Almeria City, is indeed a regular township, covering 5 hectares (12½ acres) and protected by wall and fosse. Outside the wall lay a cemetery of a hundred or so collective tombs, some containing up to 100 corpses. Settlements or cemeteries illustrating the same economy are found at Almizaraque,² about a mile up from the mouth of the Almanzora, at Belmonte, Purchena, and Tabernas³ and Velez Blanco,⁴ though the last four sites are to some extent provincial.

Generally metal-working has been added to the primary occupations of farming, hunting and fishing. Slags attest the extraction of copper and lead. Siret believes that thick clay arcs, perforated at both ends and up to 22 cm. long between the holes, formed parts of a reverberatory furnace for cupellation.⁵ These arcs, which are in any case characteristic of the period, are, however, on Anatolian analogies more probably to be interpreted as loom-weights. The copper-smith produced narrow flat adzes, notched daggers with a midrib on one face only (like Fig. 128) and others of West European type (Bel-

¹ RQS., 1893; Leisner, *Megalithgräber*, 19-64.

² *Mem. R. Acad. Hist.*, XIV (1907); Leisner, *op. cit.*, 10-13.

³ Leisner, *ibid.*, 59, 63, 73.

⁴ F. de Motos, "L'Edad neolitica en Velez Blanco," CIPP., *Mem.* 19 (1918).

⁵ Siret, "Orientaux et Occidentaux en Espagne" (RQS., 1906 and 1907), pl. II, 21—Almizaraque; similar arcs from Velez Blanco, CIPP., *Mem.* 19, fig. 31. On metallurgy at Almizaraque, see *Investigación y Progreso*, IX, No. 4, Madrid, 1935.

monte, Los Millares), cutters as in the Cyclades, quadrangular awls, and even saws.

Trade brought to Los Millares hippopotamus ivory and ostrich egg-shells from Africa, turquoise, callais, amber, and jet from undetermined sources. But stone was still normally used

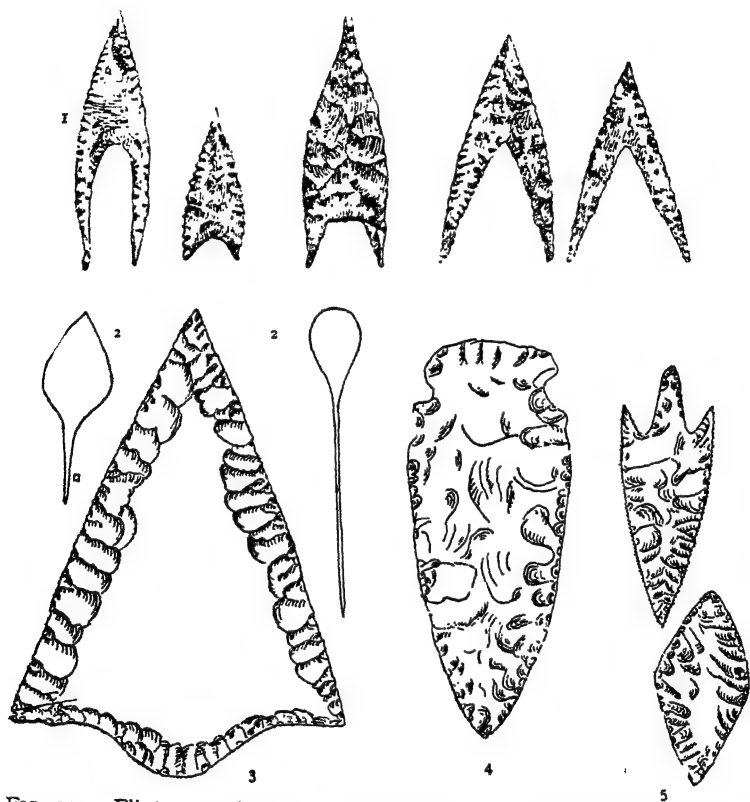


FIG. 125. Flint arrow heads: 1, Alcalá ($\frac{1}{2}$); 5, Los Millares ($\frac{1}{2}$). Halberd blades: 3, Casa da Moura; 4, Los Millares ($\frac{1}{2}$). 2, Palmella points ($\frac{1}{2}$).

instead of metal for axe-heads, and flint was now superbly worked by pressure flaking for arrow-heads, dagger or halberd blades (Fig. 125, 4), as well as knives and sickle-teeth. Apart from transverse arrow-heads which were still used, 68 per cent of the specimens from Los Millares are hollow-based, 17 per cent tanged-and-barbed, 7 per cent leaf-shaped (Fig. 125, 5). Thick plaques of clay, perforated at the four corners, may have

been used as wrist-guards or loom-weights.¹ A stone plaque perforated at each end from Belmonte was used as a whet-stone.

The pottery on the whole carries on the native Almerian tradition, but some vases are decorated with incised patterns that include oculi motives (like Fig. 126, 2) and conventionalized stags (Fig. 126, 3), with small knobs or even painted in warm black on a light ground. New forms include squat birds' nest pyxides, sometimes with plaster necks, cylindrical tumblers and little globular vases with short necks as well as a few multiple vessels. Beakers were found, apparently as an intrusive element in only four tholoi at Los Millares, in one each at Belmonte, Purchena and Almizaraque and in five cists. Vases were also made out of plaster to imitate ostrich eggs, and unguent flasks were carved out of ivory or white limestone.

As toilet articles and ornaments, bone or ivory combs were worn at Los Millares, the clothing fastened with shanked stone

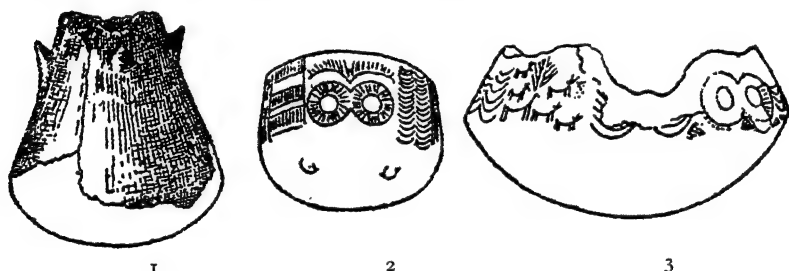


FIG. 126. "Late Neolithic" vase from Tres Cabezos and Copper Age vases from Los Millares.

buttons, and simple disc or barrel beads of stone, shell, talc, and imported materials were hung on strings round the neck. At Almizaraque, conical and prismatic buttons with V-perforation and a grooved bone toggle of a type found at Troy and Alişar were used as dress-fasteners, and in the tholos at Tabernas and probably also in that at Llano de Media Legua on the Almanzora, bone pins with grooved cylindrical heads (like Fig. 128) were found.

The Almerians were, however, deeply preoccupied with immaterial ends. The collective tombs were constructed with great care; sixty-five of those at Los Millares, as at Almizaraque, Belmonte, Tabernas, are corbelled tholoi (Fig. 104), often

¹ From Tres Cabezos (neolithic), Velez Blanco, Mas de Menente (Alicante, Bronze Age!).



FIG. 127. Ritual objects: 1, Almeria; 2 and 4, Portugal; 3, Granada (†).

with cells opening off the chamber or passage, and with porthole slabs for entries,¹ covered with circular cairns supported by a

¹ Leisner, in *Marburger Studien*, I, 148 ff.; cf. *Arqueologia e História*, I. (1945), 15-19.

built retaining wall on to which straight or curved walls may be built to frame a forecourt. Wooden pillars are said to have supported the roof. A few tombs at Los Millares are rectangular or trapezoid megalithic cists from 2 to 5 m. long, preceded by a short entrance passage. But at Velez Blanco the dead were buried individually in polygonal cists under a barrow. Ritual objects include owl-eyed female figurines made by painting bovine phalanges (Fig. 127, 1), or stone and ivory cylinders, plain plaques of schist (Los Millares), and flat stone figures without faces like Fig. 8, 13, and, at Almizaraque, bone models of sandals. Axe-amulets were worn as charms at Los Millares and elsewhere.

The urbanization of Almerian economy seen at Los Millares and Almizaraque is presumably a reflection, however indirect, of Oriental cities' demands for metal. But the townships, thus created, themselves constituted local secondary centres of demand and radiated their influence right across the Peninsula. Westward, parallel or colonial settlements sprang up all across Andalusia to the coasts of Portugal along the natural route, followed by the modern railways from Almeria to Algarve, and principally at focal-points (now junctions) thereon or in metalliferous districts.

On the plateau of Granada¹ are several large cemeteries of collective tombs round Guadix, Gor, and Gorafe, composed partly of tholoi, more often of cists of the Almerian form and frequently entered through porthole slabs. The tombs contain typical Almerian products—oculi vases, flat stone idols, phalange idols, ribbed cylinder-headed pins,—as well as a few Beakers. Yet other tombs of the same form in these cemeteries contain pottery and bronzes characteristic of the succeeding Argaric Bronze Age. Further west at Antequera² and in the ancient Betica,³ the route is marked by superbly built tholos tombs, while stroke-burnished ware from villages near Jerez and Carmona⁴ points to fresh impulses direct from the East Mediterranean. But at Campo Reale near Carmona, Bonsor⁵

¹ Leisner, *Megalithgräber*, 84-168.

² *ibid.*, 174-185.

³ *ibid.*, 194-213.

⁴ *Acta Arqueol. Hispanica*, III (1945), 37; Bonsor, "Les Colonies agricoles pré-romaines de la vallée du Bétis," *Rev. Arch.*, XXXV, 1899, III.

⁵ *op. cit.*, 36-9, 105-110, fig. 41-2.

found "silos" containing human bones, polished stone axes, plain pottery, and a little painted ware akin to the Almerian and the characteristic clay arcs.

Then, in Algarve, a metalliferous region where the rocks are suited to dry-stone masonry, a cemetery of seven tholoi at Alcalá¹ marks the site of a smaller Los Millares. The tombs contained flat adzes, notched daggers with midribs on one or both faces, awls and saws of copper (Fig. 128), superbly worked

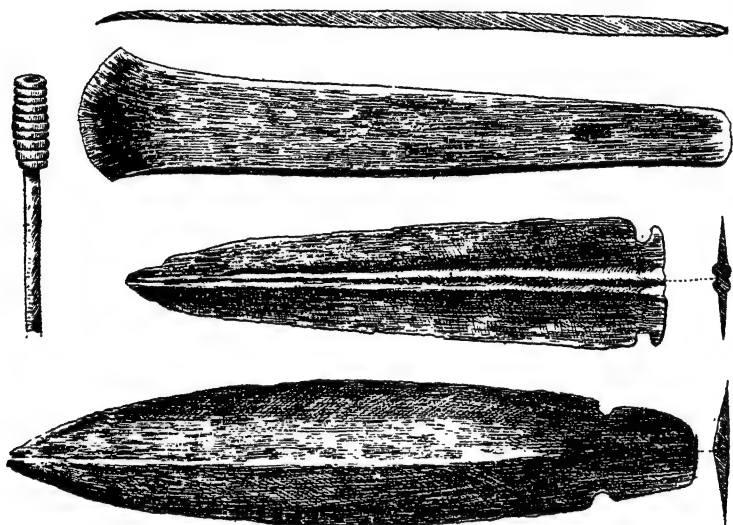


FIG. 128. Copper daggers and adze, Alcalá, and bone pin, Cabeço da Ministra ($\frac{1}{2}$).

hollow-based arrow-heads of flint (Fig. 125, 1), undecorated vases of Almerian type, a marble paint-pot, a clay arc, hammer beads, and beads of amber, callais and jet, but not Beaker ware nor West European daggers. Corbelled tombs extend along the Portuguese coasts as far north as Torres Vedras (Peña and Barro with semicircular forecourt).² Tombs at Monge and San Martinho, Cintra,³ excavated in the rock but roofed by corbelling, illustrate the transition from the built tholos to the rock-cut tomb.

Tombs of the latter class, agreeing in plan with the tholoi,

¹ Estacio de Veiga, *Antiguidades monumentaes do Algarve*, Lisbon, 1886-1891.

² Peña (*OAP.*, XIV, 354), and Barro, with semi-circular forecourt. V. Correia, *CIPP. Mem.* 27 (1931), 72, relics at Belem.

³ Cartailhac, *op. cit.*; *OAP.*, II, 211.

like them sometimes preceded by an ante-chamber or a curved forecourt and with entrances carved in the rock that give the same effect as the porthole slabs, are in fact the commonest form of sepulchre on the Portuguese coasts. At Alapraia¹ on the Tagus estuary and Palmella² farther south, such tombs form regular cemeteries, adjacent to fortified hill-top townships,³ just as at Los Millares. The cemeteries are situated, like those in Almeria, Andalusia, and Algarve, at focal points on terrestrial and maritime routes.

In the Palmella culture the essential features of the Millares economy are conserved though less fully than in Algarve. Metal tools and weapons are rare in the rock-cut tombs and practically confined to the odd arrow-heads⁴ shown in Fig. 125, 2. The place of copper in industry is taken by stone axes and adzes and superbly worked flints including halberd blades like Fig. 125, 4, that may be polished on the faces as if in imitation of metal. Arrow-heads include still the transverse type and its derivatives, but hollow-based, tanged and leaf-shaped forms, none comparable in delicacy to those from Alcalá, occur in the proportions of 72, 19, and 9 respectively at Palmella. Trade brought gold, callais, amber, and ivory, while the connections with Almeria are explicitly attested by cylinder-head pins from tombs and by clay plaques perforated at the corners from contemporary settlements. But half-spool-shaped beads from Palmella and Vilanova de S. Pedro seems akin to the Sardinian-Provençal type of Fig. 122a, while a pair of basket-shaped gold earrings from a rock-cut tomb at Ermageira⁵ reproduce a familiar Irish type (cf. Fig. 154).

In the Palmella pottery Beaker ware, both of the "grand style" (Fig. 107, 1-2) and of the "classical" variety decorated with rouletted zones⁵ is the most prominent element, but plain round-bottomed and carinated vessels may be related to the Almerian and Andalusian series.

Among the ritual objects too, besides familiar Millares types phalange (S. Martiño) and cylinder idols and schist sandals (Alapraia), the Palmella tombs contain a variety of peculiar

¹ Afonso da Paço, "As grutas de Alapraia," *Broteria*, XXI (Lisbon, 1935); *CISPP.*, Oslo, 1936; *Anais*, IV (Lisbon, 1941).

² *OAP.*, XII (1907), 210, 320; Cartailhac, *op. cit.*, 119.

³ *OAP.*, XI, 40; XX, 115.

⁴ One such "point" was found sticking in a skull at Valdenabi, Leon; *Corona d'Estudis dedica a sus Martires*, Madrid, 1941, 128.

⁵ *Ethnos*, II (Lisbon, 1942), 449-458.

Portuguese forms—plaque idols richly decorated with incised patterns (Fig. 127, 2), schist croziers, similarly decorated, marble copies of shafted hoe-blades and large crescentic "collars" of limestone.¹

In addition to the semi-urbanized population living in fortified townships and burying their dead in rock-cut tombs or tholoi, more rustic communities living off the main routes, sometimes on fortified hill-tops,² continued to bury their dead



FIG. 129. Pottery from Portuguese passage graves. After Leeds ($\frac{1}{8}$).

in natural cave ossuaries or erected megalithic passage graves many of which reproduce faithfully in orthostatic masonry the plans of the rock-cut tombs and tholoi (two are even entered through porthole slabs).³ The megalithic tombs may form small cemeteries of four or five and extend over the rough

¹ Afonso da Paço, *Anais*, IV, 122, compares these to Irish gold lunulae, but the perforations, if any, are near the centre, not the ends; comparison with the clay arcs might be equally legitimate.

² Correia, *CIPP.*, *Mem.* 27, 1-24 (Castillo de Pavia).

³ *Marburger Studien*, I, 150.

highlands of Portugal into the adjacent Spanish provinces of Salamanca,¹ Badajoz, and Carceres. Their furniture is generally poor, stone axes and plain, round-bottomed and carinated pots (Fig. 129) being conspicuous, but in all groups sherds of Beaker ware, rare West European daggers, cylinder-head pins, beads of callaïs, schist idols and croziers suffice² to prove a partial synchronism with the richer cemeteries of the Palmella culture at more focal points.³ The flat-bottomed and handled vases of Fig. 129 on the other hand, should be later and represent a parallel to the Almerian Bronze Age. The tombs' orthostats may be painted or engraved with the owl face of the Millares goddess, or even representations of a copper dagger.⁴ The country folk were imitating in barbaric architecture the more sophisticated sepulchres of the townsmen and were obtaining occasionally products of urbanized industry and trade.

Similarly on the east coasts from Almeria northward to Catalonia rural communities continued to bury the dead in natural cave ossuaries. While they relied mainly on stone for axes, they obtained objects of copper, and beads of callaïs, learned to work metals and copied locally such Almerian types as cylinder-head pins and painted phalange idols⁵. Flint daggers and hollow-based arrow-heads of Portuguese form are not, however, found north of Almeria. The local pottery preserves the rounded Almerian shapes but is generally mixed up with decorated "Cave wares" and beakers. A round-headed minority is represented in most of these caves.

From many Copper Age tombs and settlements, especially in Portugal, but also in Almeria, bones of horses—or just possibly asses—have been reported.

The Beaker culture itself, if not the result of a fresh African intrusion, may be due to such an impact of the Millares culture on some group of earlier cave folk, perhaps in the Guadalquivir valley (Betica). In any case the purest Beaker settlement known was found by Bonsor⁶ near Carmona at Les

¹ JSEA., *Mem.* 113 (Madrid, 1930).

² e.g. CIPP., *Mem.* 27, 75; Forde, *Am. Anthr.*, XXXII (1930), 35-45.

³ Cylinder-head pins come from Anta grande da Ordem, Alentejo (Åberg, 97), and Monte Abrao, and clay arcs from the Castillo de Pavia.

⁴ Breuil, *Les peintures rupestres schématiques*, IV, 148.

⁵ Blanquizes de Labor, Murcia; Cami Real and Barranc de Castellet, Alicante (*Arch. Preh. Levant.*, I, 31-72); Monte de Barsella, Alicante, JSEA., *Mems.* 112 (1930); *A.P.I.*, II, 115-140.

⁶ "Colonies agricoles," 88-90, 116-123, 132.

Lapidés of Acebuchal. The vases are decorated mainly in the heavy incised style, encountered at Palmella in Portugal (together with the rouletted variety) and at many sites in Central Spain notably in graves (of uncertain character) at Ciempozuelos¹ near Madrid, in one of which a West European dagger was also found. On the other hand the Beaker pottery from Les Lapidés, Acebuchal, comprises abnormal forms including a goblet like a decorated version of Fig. 130, 4-5, a shape distinctive in Almeria of the Bronze Age culture of El Argar. The relics include whet-stones perforated at both ends that are also normally Argaric rather than Copper Age, though a specimen occurred in the tholos at Belmonte that also contained a Beaker.

The Beaker culture would then have expanded from its primary focus to appear with the latest interments in some tholoi and megalithic cists of the Millares culture in Almeria and Granada and in tholoi and undifferentiated passage-graves (e.g. Cañada de Carascal, a gallery 9 m. long containing a West European dagger, a gold ring, hollow-based arrow-heads and beakers²) in Sevilla. In Portugal and West Spain the Beaker culture is represented in all types of sepulchre and in settlements. The moment of this expansion within the long Copper Age is not easily defined. Beakers occur in some Portuguese tholoi (Barros, Serra das Mutelas), as in those of Sevilla, but are conspicuously absent from those at Alcalá. On the other hand sherds of Beaker ware were collected from an Argaric Bronze Age site at Orihuela (Alicante),³ while from the Iron Age "Castro de Sendem" in Portugal⁴ comes a vase which in form and decorative style is a beaker, but technically agrees with the rest of the Iron Age pottery. Hence the expansion of the Beaker complex may occur relatively late in the Copper Age. Even so, its bearers must have played an important rôle in the diffusion of metallurgical knowledge in the Peninsula as in the rest of Western Europe.

The Millares Copper Age civilization should result, like its counterpart in Sicily, from the impact of East Mediterranean

¹ *Bol. R. Acad. Hist.*, XXXV (Madrid, 1894), 436; LXXI, 22.

² Leisner, *Megalithgräber*, 214. Wherever evidence of succession exists, beakers accompany the last interments in the tombs of Betica (*ib.* 554).

³ *Bol. R. Acad. Hist.*, LIV (Madrid), 357; Castillo, *Vaso campaniforme*, 75.

⁴ *Homagem a Martinez Sarmiento* (Guimaraes, 1933), 378.

influences on the Peninsula. Some Millares pot forms have general parallels in the Early Minoan ossuaries of Crete,¹ the stone figurines are obviously like Cycladic and Anatolian ones; the owl-face engraved on plaques and vases or painted on phalanges and caves belong to the same "goddess" whom the Sumerians depicted on the handles of funerary jars and the Trojans on a stele and on face-urns. The plaque-idols like Fig. 127, 2, are very like Egyptian block figures (p. 19) or Early Cypriote clay "idols".² The clay arcs have exact parallels in Anatolia as has the toggle³ from Almazaraque; a segmented stone bead from Palmella is quite like Fig. 12, 2, while the ware from Betica (p. 267) is identical with the East Mediterranean fabric. The idea of the artificial collective tomb is East Mediterranean and was translated into corbelled vaults in Crete and the Cyclades in the third millennium. Imports of hippopotamus ivory and ostrich eggs prove maritime contact at least with the African coasts. Admittedly no actual import of Oriental manufacture has yet been identified in a Millares tomb to date it precisely. Striking similarities between the finer Iberian tholoi and those of Mycenæ and Orchomenos have indeed often been emphasized.⁴ To infer therefrom a date after 1500 B.C. for Los Millares, as Siret has done, involves apparent contradictions when attempts are made to link the West European sequence with the Central European even on the shortest Danubian chronology.

The implantation of the Oriental ideas reflected at Los Millares manifestly involves colonization though the colonists cannot be traced to any known East Mediterranean centre, but came presumably from some secondary metropolis in North Africa as did the Carthaginians in the first millennium. Their objectives would have been metal and probably also magic substances. They would have secured their wealth by exporting to the natives some material trinkets and religious ideas. And the latter provided the more effectual incentive to labour and left the deeper impression on native culture. Thus inspired and guided, the Almerians would have helped to

¹ Xanthudides, *Vaulted Tombs*, pls. XI, 1850 (stone birds' nest vases), XXXI, 687 (clay tumbler), XXX, 4982 (stud-ornament), M.M.I.).

² *Actas y Mem. Soc. Españ. Antropología*, XIX (1944), 135.

³ Schliemann, *Ilios*, fig. 536; van der Osten, "The Alishar Hüyük, 1928-9," *OIC. Pubs.*, XIX, fig. 85; for arcs, see p. 39, n. 2.

⁴ Siret, *Questions*, and "Orientaux et Occidentaux", pl. VII; Gomez Moreno, *Bol. R. Acad. Hist.*, XLVII (Madrid, 1905), 81-113.

continue the process till they secured access to the metal resources of Portugal and a footing on the Atlantic coasts from which to prosecute further the search for precious stones and ores. But the secondary cultures thus generated diverge ever farther from the East Mediterranean pattern till among the rude hillsmen who built the megalithic tombs the material and technical elements were almost swamped by the extravagant elaboration of the equally Oriental funerary ritual.

That seems a consistent account, but it is diametrically opposed to the conclusions of Bosch-Gimpera. Elaborating ideas previously advanced by Åberg, Leeds,¹ and Obermaier,² the Catalan professor contends that the megalithic civilization evolved without external stimulus in Northern Portugal. The poorest and most ruinous megalithic tombs are termed "dolmens" and presented as illustrating the initial phase of this development. From Northern Portugal the megalith-builders would have expanded, when the dolmen had been enlarged to the passage grave, to the Tagus basin and, later still, replacing the megalithic passage grave by the built tholos, to Algarve and across Andalusia to Almeria. Alcalá represents the ultimate phase of this evolution, reached only after Beakers had gone out of fashion, and Los Millares would reflect an eastward expansion of the Alcalá culture in the wake of a previous Beaker inroad.³ On this account not only architectural forms but metal types and economy can be arranged in a plausible evolutionary series.⁴ At the same time a chronological approximation of the Iberian tholoi to the Mycenæan would be easier while the connections with the British Isles and Denmark would be more comprehensible; the hammer pendant from Alcalá, already cited for Early Minoan parallels, recurs again both in the fine Irish tholoi and also—in amber—in early Middle Bronze Age graves of Wessex (p. 329). In Denmark "Almerian" oculi motives and hollow-based arrow-heads appear in Neolithic IIIId, after Beakers. But besides lacking any stratigraphical basis and conflicting with diffusionist principles, it involves contradictions when an attempt is made to fill up the rest of the prehistoric period with connected material.

¹ *Arch.*, LXX (1920), 201 ff.

² *CIPP.*, *Mem.* 26.

³ *Préhistoire*, II (1933), 200, 237, n. 3.

⁴ The thesis is devastatingly criticized by Forde, *Am. Anthr.*, XXXII, 33 ff.

THE BRONZE AGE

In Eastern Spain the Copper Age culture of Los Millares develops into, or is succeeded by, a no less well-defined semi-urban culture of Bronze Age type, named after the type station at El Argar.¹ Its authors continued to live in hill-top townships, or citadels, more solidly fortified than before. There might even be galleries in the walls. The houses are agglomerations of rectangular rooms with stone foundations, but the total areas are small—the acropolis of El Oficio covered $2\frac{1}{2}$ acres. The dead were no longer buried in collective tombs but individually in cists or jars among the houses; the 780 graves actually identified at El Argar give some indication as to how large the population must have become or how long the Argaric Bronze Age lasted. Metal was mined and worked locally on a larger scale than in the Copper Age and was effectively distributed throughout the province. Long distance trade on the contrary languished; it brought only a few beads of callais and segmented beads of Egyptian fayence like those from Perjámos graves. Tin was scarce, and the smith had generally to be content with copper or poor bronze. But he could turn out flat axes with splayed blades or even with hammered flanges, awls, saws, round-heeled daggers that might be elongated into swords up to 70 cm. long (Fig. 130) and specialized halberds which seem to be local translations of Copper Age flint forms.² Silver was sometimes used for rivets. Whet-stones perforated at both ends were in regular use. Yet polished stone axes are quite plentiful on all Argaric settlements.

Round-bottomed and carinated pots might seem to carry on some Copper Age traditions (Fig. 130), but technically the fabric, red, black or mottled, is surprisingly like Anatolian Bronze Age pottery and its Danubian IV analogues. The carinated shapes, too, but for the absence of handles, would fit well into the Unĕtician repertory; indeed one mug from a typical cemetery near Orihuela is actually provided with a handle.³

Ornaments included diadems of silver (Fig. 130, 1), beads,

¹ Siret, *Les premiers âges* is the principal source.

² *Arch.*, LXXXVI (1936), 288, 298.

³ Institut d'Estudis Valencians: Servei d'Investigació Prehistòrica, No. 5 (1928), *Col·lecció de Treballs del P. J. Fergus*, IV, lam. I, 2.

rings and simple bracelets of gold, silver or copper, perforated boars' tusks carrying tiny rings of copper wire, shells, fish-

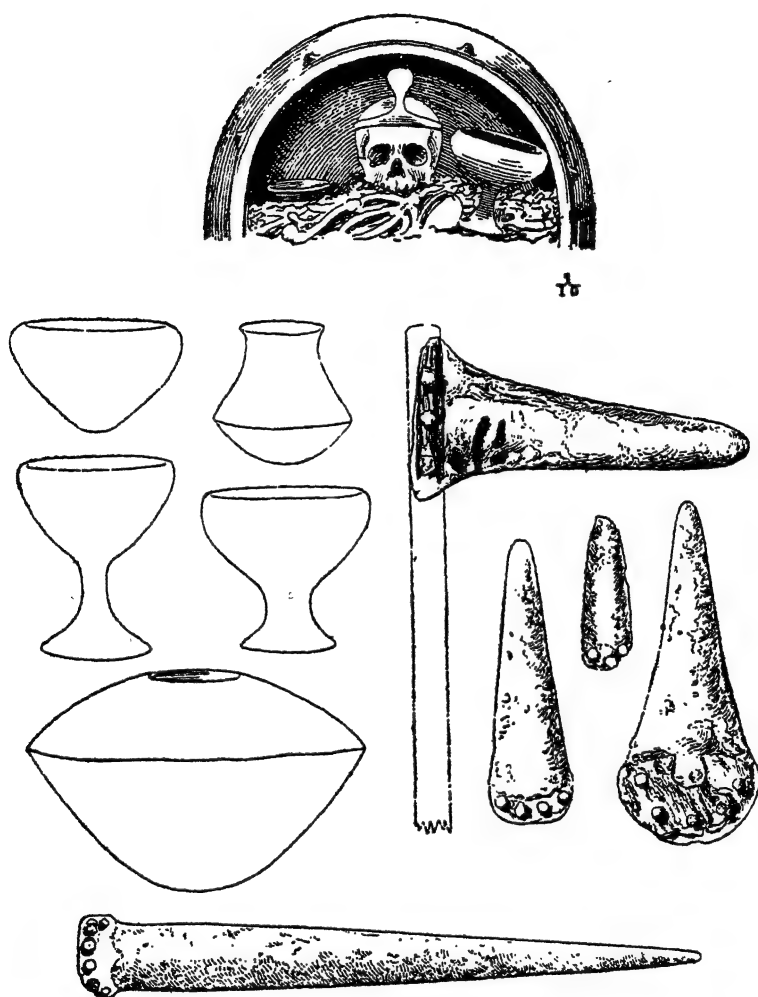


FIG. 130. Argaric burial jar showing diadem (1b); funerary vases (1c); halberd and dagger-blades (1d); sword (1e). By permission of Trustees of British Museum.

vertebræ and various beads (none of amber). Apart from an "altar" surmounted by "horns of consecration" at Campos, ritual objects are no longer conspicuous. In the mixed

population round heads were mingled with a majority of Mediterraneans.¹

This culture might be regarded as a continuation of the Millares civilization, cut off from the avenues to wealth offered by foreign trade and consequently producing for a restricted local market and seeking to replace by war the gains previously obtained by peaceful trade and kept in circulation by works of superstition. That it was not altogether cut off from Eastern influence may, however, be inferred from the Anatolian similarities in the pottery, the Anatolian practice of jar burial,² the Ægean horns of consecration, and more securely from imported fayence beads from Fuente Alamo. The latter show that the Argaric Bronze Age culture was flourishing about 1400 B.C. How much earlier it began is uncertain, how much longer it persisted still more so. There are no connected remains outside the Argaric citadels and graves till the Iron Age after 1000 B.C., so that Almeria is in much the same plight as Sardinia. Outside that province the position is still worse.

Typical Argaric cemeteries, well provided with metal tools, as far north as Alicante and Valencia³ illustrate the effective extension of the Almerian economic system. But in the province of Alicante itself in the Alcoy district on the hill-top citadels of Mola alta de Serelles⁴ and Mas de Menente⁵ axes of Argaric type were cast, or Argaric riveted daggers used, but the round-bottomed bowls and globular jars preserve traditions of the Copper Age in contrast to the sharper profiles of Argaric pottery, while polished stone axes were still regularly employed.

Westward in Granada some megalithic tombs in the cemeteries of Gor, Gorafe, and Los Eriales contain Argaric bronzes, ornaments and pots. So at Alcaïda near Antequera,⁶ rock-cut tombs, reproducing exactly the plan of the built tholos, contain relics of Argaric type. Otherwise there is nothing in South Spain till the Iron age. In Portugal cemeteries of cist graves containing (? Argaric) carinated pottery are rare and

¹ Coon, *Races*, 151, insists on contrast with "Copper Age" population.

² The Argaric citadels are absurdly like Central Anatolian townships such as Ahlatlibel.

³ *Bol. R. Acad. Hist.*, LIV, 357; cf. n. 3, p. 275; A.P.L., II, 151-163.

⁴ *JSEA.*, Mem. 94 (1927).

⁵ A.P.L., I, 101-112.

⁶ Gimenez Reyna, "Mem. Arqueol. de Malaga", *Informes y Mems.*, 12 (Comisario gen. de Excavaciones, Madrid, 1946), 49 ff.

concentrated chiefly in Algarve—just where Bosch-Gimpera wants to insert a special Alcalá phase to fill the beginning of the Bronze Age. Sometimes the capstones of the short cists are carved with representations of developed metal axes.¹ Apart from cist graves, only the megalithic passage graves and natural cave sepulchres are available to fill the gap in the funerary record between the Copper and Late Bronze Ages; carinated and even handled pots from such might well be "Bronze Age" (Fig. 129). In the citadel of Vilanova de San Pedro² both Palmella and Argaric types occur. Still Argaric bronzes are very rare in Portugal. On the other hand bronzes of highly specialized type, especially two-eared palstaves,³ show that there arose in North Portugal and Galicia during the later Bronze Age an important centre of metallurgy the products of which were exported to Britain, in a revival of the old trade reflected in the gold earrings from Portugal and lunulae of Irish form⁴ from Galicia.

The "Oriental" metal-workers and traders who had settled in the Peninsula at the beginning of the Copper Age had promoted both an economic and a religious revolution. They seem in the sequel to have been cut off from their bases and markets by the jealousy of intermediate islanders and by the diversion of traffic to the Danube-Brenner routes during Danubian period IV. In Almeria the effects of the Oriental contacts remained for a while a driving force in material development; on the western coasts only the spiritual impulse had impetus enough to be propagated longer, and culture relapsed into a barbarism whose surviving achievements are unnecessarily big tombs rather than populous townships. And even on this hypothesis Bosch-Gimpera's attempt to inflate the age of the Portuguese megalithic culture at the expense of the Almerian cannot be made plausible. The latter region does offer us a substantial array of imposing citadels and cemeteries subsequent to the Copper Age. Nothing comparable is available in Portugal unless we follow the suggestion made here and transpose from before to after the Copper Age Bosch-Gimpera's "dolmens and early passage graves".

¹ OAP., XI (1906), 108; cf. *Act. y Mem.*, XXII (1947), 158.

² Jalhay and Paço in *Act. y Mem.*, XX (1945).

³ Angel del Castillo Lopez gives a map of their distribution, *Public. de Facultad de Filosofia y Letras*, Universidad de Santiago, III, 1927.

⁴ *Prehistoire*, II, 237.

CHAPTER XVI

WESTERN CULTURE IN THE ALPINE ZONE

THE diversified region north of the Pyrenees and west of the Rhine and the high Alps, which had been steppe and parkland during the Ice Age, in the subsequent forest period still supported Azilian descendants of the Magdalenian reindeer-hunters and salmon-fishers, of Tardenoisian immigrants from Africa and of Forest-folk who spread southward. These autochthonous food-gatherers were converted gradually to a food-producing economy by the spread of an exotic neolithic culture, and, multiplying in response to the new opportunities of livelihood, accelerated its expansion. The Western neolithic culture, that originally caused the transformation, is itself largely an inference from later survivals.¹ While its diffusion must have been due to the immigration of farmers with their cereals and herds, these seem everywhere to have been ready to borrow equipment from the autochthonous population. And in time most fell under the sway of the megalithic idea and subsequently of the Beaker folk. Only in the lowest levels of some caves in Aude (p. 293), on the upland fringe of the province to the east and beyond the Channel in Southern England (p. 313), can the original Western culture be grasped in any sort of purity.

As exemplified by its survivals in these sheltered regions, Western economy was originally based primarily on the breeding of horned cattle together with pigs, sheep, and goats, supplemented by the cultivation of cereals (including emmer) and by hunting. The husbandman may have used a sort of plough. The huntsman tipped arrows with double-ended bone points, or flint heads worked on both faces. The communities, if small, were so well organized that the settlements normally take the form of fortified hill-top "camps" or lake-dwellings such as could only be constructed by societies disciplined for co-operation. And the immigrants may have included families experienced in mining. Archæologically the Western complex is most easily recognized by its pottery. The dark-faced,

¹ Childe, *Arch. J.*, LXXXVIII, 38-46; J. Hawkes, *Antiquity*, VIII, 26-40.

undecorated, round-bottomed baggy or carinated vases are evidently imitations of vessels made in tensile leather, such as are appropriate to cattlemen. They are regularly associated with clay ladles. Moreover, the woodworker used axes, whether of polished stone or of flint, in preference to adzes.

The pottery and other traits indicate the origin of the West European neolithic culture in a North African cycle best represented at Merimde¹ on the western edge of the Nile Delta. Intermediate stages in the expansion of this complex cannot yet be identified, but the most likely route is by land across North Africa along the Iberian Peninsula and round the Pyrenees. Characteristically Western leathery pots have in fact been found in Portuguese² and North Spanish caves,³ but seldom separated stratigraphically from decorated Copper Age fabrics (p. 262). Indeed, much of the Almerian and Portuguese pottery of the latter period embodies, albeit in more sophisticated form, the same Western leathery tradition.

It is convenient to describe first the manifestations of Western culture in areas unaffected by the megalithic and Beaker complexes. The waters of the Swiss lakes have preserved not only a unique record of neolithic equipment, but the fullest picture of a pure Western culture. Having typified the New Stone Age to archæologists since their discovery in 1853, the Swiss lake-dwellings now provide the clearest record of cultural development in Western Europe, thanks mainly to the stratigraphical explorations conducted by Vouga on L. Neuchâtel since 1919. At several sites he has recognized the same succession of four occupations with a sterile layer between the first two.

THE CORTAILLOD CULTURE OF THE WEST ALPINE LAKE-DWELLINGS

The oldest lake-dwellings in Western Switzerland⁴ were erected by farmers who arrived with a complete neolithic equipment (constituting the Cortaillod culture). They cultivated wheat (emmer and probably also bread wheat—

¹ Childe, *NLMAE.*, 58-62.

² Casa da Moura (lugged pots, etc., noted in Lisbon).

³ Cova fonda de Salamo (Bosch-Gimpera, *Etnologia*, fig. 114).

⁴ Vouga, "Le néolithique lacustre ancien," Université de Neuchâtel, *Recueil de Travaux, Faculté de Lettres*, 1934; *Antiquity*, II (1928), 388-392.

T. compactum) and barley, and also peas, beans and lentils.¹ Plums and apples were at least gathered; apples were eventually cultivated by the Lake-dwellers, though not certainly in the Cortaillod phase, and a sort of cider brewed from them. Horned cattle (*Bos brachyceros*) were bred together with minor herds of pigs and small flocks of sheep and goats.² Cattle were stalled and manure collected. A neolithic (? Cortaillod) yoke³ survives, and Vouga considers some stone implements to have been used as ploughshares. Game contributed much less to the community's diet than domestic stock. But the huntsman used arrows tipped with double-ended bone points (Fig. 131), or more rarely with transverse or triangular flint heads. Fish were caught in traps, in nets weighted with grooved stones and suspended from birch-bark floats, and were perhaps also speared with antler "harpoons".

The farmers lived in rectangular houses³ strung out in small clusters along the shore and raised on piles above the waters. So the cultivable land was left unencumbered with dwellings, and the wood felled in clearing fields was usefully disposed of. The wood-work was done with stone axes and adzes made from

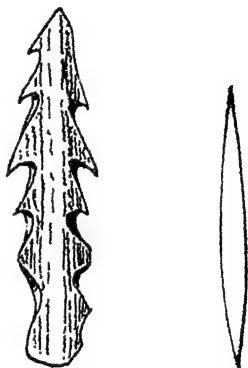


FIG. 131.
Antler harpoon (3) and bone
arrow-head (4), Switzerland.

suitably shaped pebbles or sawn-out blocks of fine grained rock. They were mounted in tapering antler sleeves (Fig. 135, A) which were fitted into straight wooden shafts. Antler axes and picks with square-cut shaft hole were also employed.

A local flax was cultivated for its seeds and for its fibres which were woven into linen, but the spinner did without whorls. Skins were doubtless largely worn; bundles of bone

¹ Plants from Neuchâtel not yet identified; cf. instead, Beck, Rytz, Steklen, and Tschumi, "Der neol. Pfahlbau Thun," *Mitt. naturforschenden Gesellschaft*, Bern, 1930.

² The proportions are: oxen 39 per cent, swine 21 per cent, sheep and goats each 18.5 per cent of food animals; game only 30 per cent of total animal bones; Vouga, op. cit. Bones of wild horse are reported from Port; Tschumi, *Die ur- und frühgeschichtliche Fundstelle von Port, im Amt Nidau*, Biel, 1940, 73.

³ Ischer, *Pfahlbauten des Bielersees* (Biel, 1928), 43, pl. VII.

⁴ Not certainly rectangular; *Germania*, XVIII, 93.

spines, like the antler combs of Michelsberg and Windmill Hill, were probably used in leather dressing. The pots are of simple Western leather-forms without handles save for lugs which may be perforated with several vertical holes (Fig. 132). Baskets were plaited with great skill.

The flint instruments were all made from an exotic flint strange to the Neuchâtel basin, but its provenance is unknown. Otherwise the Cortaillod sites have yielded no unambiguous evidence for trade or specialization in industry.

Combs for the hair were made of wood. As charms and ornaments were worn beads of steatite and wood and bored teeth, cranian amulets, as in South France, grooved tine-tips, perforated bones, models of wooden clubs, and boar's tusks perforated at both ends. No burials have been discovered,

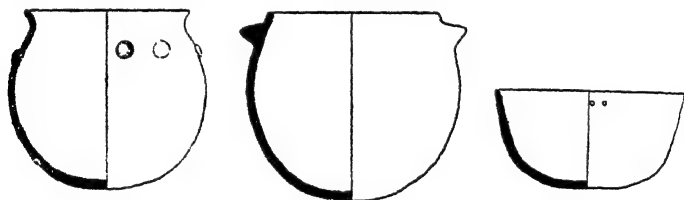


FIG. 132. Cortaillod pottery. After *Antiquity* ($\frac{1}{4}$).

but some human bones from the settlements had been broken as if to extract the marrow. So the Cortaillod people may have been cannibals. Two measurable skulls have been recovered; both were dolichocranial. The oldest neolithic civilization of the Alpine zone is no more associated with the imaginary brachycephalic invaders than is the Danubian.

The derivation of the Cortaillod culture of Switzerland from the south-west is supported by analogous ceramic material from L. Chalan and Camp Montmoret¹ in the Jura, from Camp de Chassey in Central France and from the cave of Bize near Narbonne. But traits, missing in its remote African ancestral complex may have been borrowed from mesolithic groups—harpoons and the use of antler sleeves from Azilians, perforated antler axes perhaps from Forest folk. In Switzerland itself the Cortaillod culture can be traced to the Rhine and the Lakes of Zurich and Thun.² As we saw on p. 238, it overflowed into the north-west corner of Italy.

¹ *Antiquity*, VIII (1934), 27.

² *Germania*, XVIII (1934), 91.

THE MICHELBERG CULTURE

North of the Cortaillod province, in pile-villages on the Lake of Constance, in moor-villages north of the Rhine, in hill-top camps in South-West Germany, and at the flint-mines of Spiennes in Belgium, the place of Cortaillod is taken by a different but partly contemporary facies of Western culture—named after the hill-top camp at Michelsberg¹ in Baden.

The moor-villages may comprise up to 24 houses grouped along regular corduroyed streets.² In land settlements as many as 75 houses have been recorded, but, since a hut might be pulled down at its owner's death, they cannot all be regarded as contemporary. The houses themselves were again rectangular, varying in size from 6 by 3.6 m. to 5.3 by 3.2 m. or less, but normally divided into two rooms with a hearth in the inner and an oven in the outer (like Fig. 134). The land stations in Germany were generally defended by flat-bottomed ditches and palisades; the ditches of many camps are interrupted by frequent causeways as in England.

Economically Michelsberg and Cortaillod stand on a similar footing, but hunting was much more prominent in the Michelsberg food-quest, and the bones of horses, presumably wild, occur in their kitchen refuse. Moreover, Spiennes³ was a community of specialized flint-miners skilled at sinking shafts and digging out subterranean galleries. Indeed the Michelsberg settlers there constituted a specialized industrial community, supplementing their livelihood by exporting the products of their mines and workshops—and Spiennes was no isolated phenomenon within the Western complex. It implies also the development of hunting expeditions and transhumance into something like regular commerce. Hoards of Western axes in Southern Germany may belong to Michelsberg traders. As a result of such trade some communities, like that at Weiher near Thayngen, eventually obtained copper axes and amber beads.

But on the whole Michelsberg equipment is typically neolithic and agrees generally with that of Cortaillod save for

¹ Childe, *Danube*, 178-184; Buttler, *Donauländische*, 79-91.

² Buttler, *Donauländische*, 74-8; R. R. Schmidt, *Jungsteinzeitliche Siedlungen in Federseemoor*, 1930 ff.

³ Loë, *La Belgique ancienne*, I, 190 ff.; and *Antiquity*, VII (1933), 166-183.

a preference for leaf-shaped arrow-heads in Belgian stations¹ and occasional perforated axes of Danubian type. The pots are still leathery, but some are flat-bottomed and jugs may have

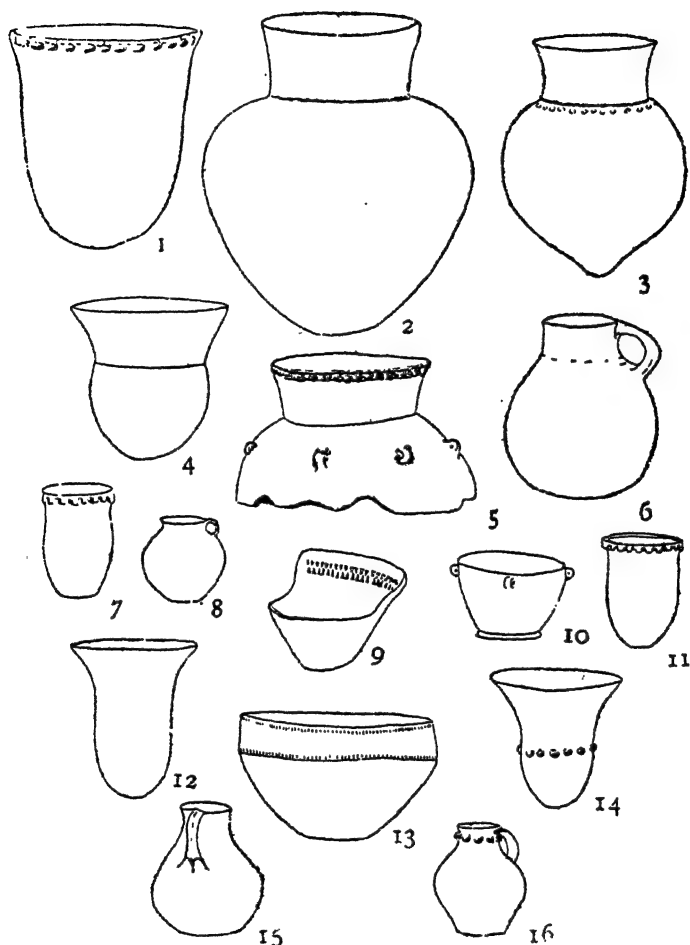


FIG. 133. Michelsberg pottery.

genuine handles. The distinctive shapes are, however, the so-called tulip beakers (Fig. 133, 12 and 14), and flat circular plates supposedly used for baking cakes. For leather dressing

¹ *BSA. Brux.*, XXXIX (2), 150 ff.; *Arch. J.*, LXXXVIII, 43.

brush-like antler combs were employed at Spiennes as in England.¹

The dead were generally buried contracted or extended in the settlements, sometimes in the ruins of their huts, but small cemeteries containing up to seven graves have been recorded.² The skulls are dolicho- to mesaticranial, again not brachycranial !

The Michelsberg culture admittedly flourished for a long time. Weiher, for instance, was overwhelmed by a flood and then rebuilt. The earliest village was occupied in the Atlantic phase before the beech was prominent in the glens.³ Vogt⁴ infers a partial synchronism between Cortaillod and Michelsberg, and in fact Cortaillod sherds have been found at Michelsberg sites on the Lake of Constance. The population of the earlier Michelsberg villages overflowed, spreading from the Alps and Rhineland across South-West Germany into Upper Austria and as far east as Saxo-Thuringia, Silesia^{4a} and Bohemia. In this expansion the Westerners overflowed into the territory once occupied by the Danubians, who for their part had been spreading into the Western province. Owing to the contrast between the more pastoral Western economy and the more agricultural Danubian, contacts and clashes may have been delayed, but eventually they give clues as to the chronological relations between the Western and Danubian sequences.

Contacts between late Michelsberg and Battle-axe cultures have to be admitted on the Rhineland as evidence for the former's persistence till late in Danubian period III.⁵ At the Goldberg in Würtemberg, Michelsberg folk succeeded the Rössen-Danubian (p. 108) settlers who had originally fortified the hill. But sherds of Rössen pottery from Michelsberg itself and from Michelsberg lake-dwellings on the Lake of Constance and in Switzerland prove a substantial overlap in time between the two cultures⁶ so that Michelsberg must go back to period II. On the Federsee south of the Danube in Würtemberg the oldest moor-village of Aichbühl⁷ reveals an equipment apparently derived from Danubian II—two-roomed houses with ovens

¹ Loë, *La Belgique ancienne*, 190 ff.

² Buttler, *Donauländische*, 79–80.

³ BRGK., XVIII (1928), 38.

⁴ *Germania*, XVII, 92.

^{4a} Aarbøger, 1947, 262.

⁵ Childe, *Danube*, 176.

⁶ Buttler, *Donauländische*, 62–3; *Nbl. f.d.V.*, XII (1936), 98.

⁷ Childe, *Danube*, 166–8; Buttler, *Donauländische*, 42.

in the outer rooms (Fig. 134), shoe-last celts and perforated hammer axes, pedestalled bowls. So much of this equipment reappears at Weiher and "classical" Michelsberg sites in the Rhineland (not, however, in Belgium) that period II would seem an upper limit for the Michelsberg culture proper. The general economy of Aichbühl, however, and some details in the industry suggest that its occupants already comprised a Western

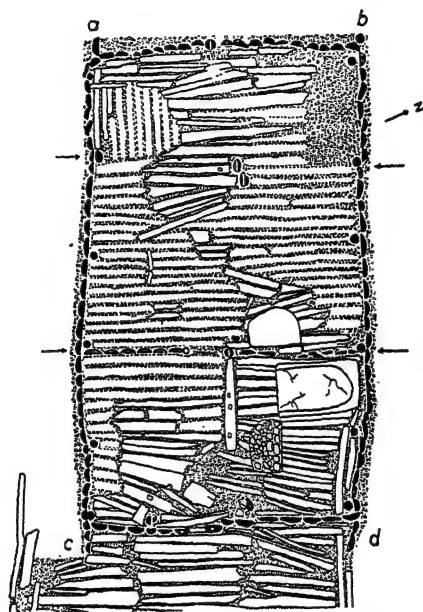


FIG. 134. Plan of a house at Aichbühl ($\frac{1}{160}$).

contingent. Moreover, though Aichbühl I was overwhelmed by an inundation, the flood is more probably to be correlated with that after Middle, than with that after Early, Neolithic on L. Neuchâtel. The Cortaillod culture may accordingly go back to period I.

THE MIDDLE NEOLITHIC Horgen Culture

On L. Neuchâtel after a flood which overwhelmed the Early Neolithic stations, many sites were reoccupied and new ones founded by people of a quite different culture¹—the

¹ Childe, *Danube*, 171-3; Vouga, *AsA.*, XXXI (1929), 167-170; *Antiquity*, II, 393-8.

Horgen culture. It is recognizable too above a Michelsberg settlement at Greifensee, on many lakes and probably also in land stations.¹ Economically the Middle Neolithic witnesses a cultural regression. On L. Neuchâtel agricultural equipment is poorer (no more "plough-shares"); hunting increases at the expense of stock-breeding, the percentage of bones of game as against those of domestic beasts rising from 30 to 45 per cent; local flint replaces the imported material. But triangular perforated axes now reach the Rhône valley, copper double-axes were copied in stone and unbored Western celts were mounted as axes in perforated or heeled antler sleeves

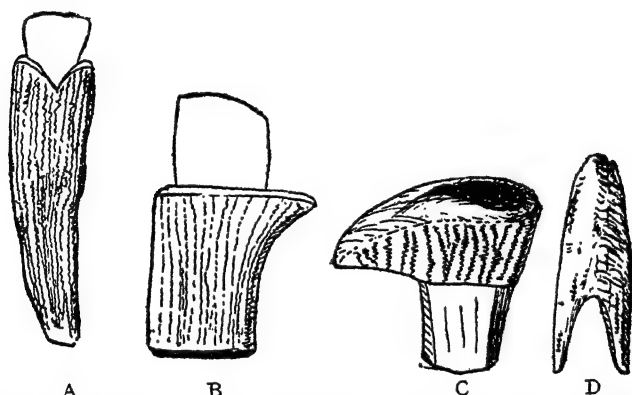


FIG. 135. Types of antler sleeves for axes: A-B, Lower; C, first in Middle; D, first in Upper Neolithic; L. Neuchâtel (?).

and as adzes in socketed ones (Fig. 135, B). Continued inter-communal specialization is illustrated by an axe-factory at Mumpf, Aargau. The pottery is coarse, badly baked, and ornamented only with raised cordons (what used to be regarded as early because crude), but the vases have flat and even splayed bases (cf. Fig. 142). Spindle-whorls of stone, however, came into use.

Even architecture declines; while some Horgen house: from the Lake of Constance are long rectangles as at Aichbühl, the occupants of other sites, like Dullenried, were content with small rectangular houses with a peaked roof, more suited to pastoral nomads than sedentary cultivators.²

¹ *Germania*, XVIII, 92-4.

² *Germania*, XXI, 155-8; Buttler, *Donauländische*, 76.

Such deterioration might be attributed to adversities overtaking the Western farmers. More probably it denotes the advent of new settlers of more purely mesolithic traditions. Judged by its pottery the Horgen culture is only one, non-megalithic, aspect of what we shall meet in the collective tombs of the Seine-Oise-Marne basins.¹ About Middle Neolithic times too contact seems to have been established across the Alps between the Rhône valley and the head of the Adriatic. A fragment of coral was found in a Middle Neolithic lake-dwelling on L. Neuchâtel. From the vicinity of Basle in the Aar valley to the upper Rhône and thence beyond the Great St. Bernard along the Aosta valley into Upper Italy extend a series of small cemeteries of cist graves.² They contain contracted skeletons accompanied by types characteristic of Middle and Upper Neolithic—unpolished flint axes of West European type, hollow-based flint arrow-heads, a triangular perforated axe, coral and Mediterranean shells, boars' tusks perforated at both ends, a button with V-perforation, and a cranial amulet. These Chamblandes cemeteries, as they are termed, might mark halting places for hunting expeditions or bands of herdsman, but afford no sufficient clue as to the homes of their authors.

UPPER NEOLITHIC AND CHALCOLITHIC PERIODS

Though separated by a "flood layer" from the Middle, the Upper Neolithic strata on L. Neuchâtel³ exhibit essentially the continued evolution of the Horgen culture; there are new types of antler sleeve (Fig. 135, D) and tanged-and-barbed or hollow-based arrow-heads. But battle-axes indicate that warlike tribes from the North European plain were already reaching the western lakes. On L. Zurich⁴ typical corded ware from the immediate successor of a Horgen village attests already the sway of Battle-axe warriors.

In the Chalcolithic phase on L. Neuchâtel⁵ their sway was extended westwards; for cord-ornamented sherds and fine battle-axes are found in the Chalcolithic villages. The barrows

¹ *Antiquity*, VIII (1934), 38.

² Tschumi, "Die steinzeitliche Hockergräber der Schweiz," *AsA.*, XXII-XXIII, 1920-1 (with map); *Altshles.*, V, 96.

³ *Antiquity*, II, 398; *AsA.*, XXXI, 171.

⁴ *Germania*, XVIII, 94.

⁵ *Antiquity*, II, 401; VIII, 38; Childe, *Danube*, 175-6.

of the invaders covering cremation burials were raised in the interior. But in the western lake-villages the native tradition is presumably illustrated by coarse wares decorated with finger-printed cordons. This decoration at the same time recalls that of the Cave pottery of North Spain, South France, and Liguria. On the Lake of Geneva south-western connections are more explicitly attested by polypod bowls,¹ like the Pyrenæan vase of Fig. 139. A surplus, perhaps exacted by Battle-axe chieftains, was now available to purchase foreign material; objects of metal including flat axes and riveted daggers, Grand Pressigny flint from Central France, and, on the Lake of Geneva, winged beads (like Fig. 140, i, n) from the Midi² occur in the lake-dwellings. But not till the Late Bronze Age did bronze-smiths, supplied with raw materials by regular commerce, establish themselves in the lacustrine villages. Stray axes and triangular and rhomboid daggers, appropriate to periods IV and even V, together with bone copies of Unetian pins (Fig. 136) have indeed been collected from many "neolithic" (in Vouga's sense Chalcolithic) lake-dwellings.³ But the economy remained formally neolithic.

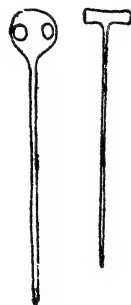


FIG. 136.
Bone copies of
Unetian pins ($\frac{1}{2}$).

On the contrary cemeteries of flat graves in the Rhône and Aar valleys⁴ are well furnished with bronze weapons and ornaments. The types—ingot-torques, ring-head, trilobate, trefoil, raquet, and bulb-headed pins, even knot-headed and Bohemian eyelet pins—are mostly derivable from Central Europe in period IV. They denote clearly enough the extension westward of the Danubian school of metallurgy and commercial system. But the local smiths in the West developed the models on independent lines; the long flanged axes and ogival daggers show that most graves in Vallais belong rather to period V than to IV. Though a relatively brilliant bronze age arose on the upper Rhône, it possessed less of an urban character than that of Hungary.

¹ At Greng and Morges, *Altschles.*, V (1934), 102.

² *Altschles.*, V, pl. XVIII, 5 (Morges).

³ *AsAg.*, IV, 2 ff.; Viollier in *Opuscula archæologica O. Montelio dicata*, 126 ff.; *MAGZ.*, XXIX, 200; *Sarasin-Festschrift*, 1919, 260 ff.

⁴ *Altschles.*, V, 103-7; Kraft in *AsA.*, XXIX (1927), 5 ff.

It follows that the Western Chalcolithic period is just a survival occupying part of period IV and perhaps persisting into V. Accordingly battle-axes can hardly have reached the Western lakes in the Upper Neolithic phase till at best very late in period III, and the Middle Neolithic Horgen culture need not begin there before period III. This agrees with the stratigraphy of the Goldberg ¹ farther east, where Horgen elements are detectable in the third (Altheim) settlement that succeeded the Michelsberg occupation.

THE EASTERN ALPS

Altheim ² near Landshut, Bavaria, Mondsee ³ in Upper Austria, Vučedol ⁴ on the lower Drave in Slavonia and Ljubljansko Blat (Laibach Moor) ⁵ in Slovenia are patent stations for a series of related cultures extending along the eastern slopes of the Alps from Goldberg in Würtemberg to Debelo brdo on the Bosna near Serajevo. They are lake-dwellings or fortified hill-top camps; at Altheim three concentric rings of ditches and palissades enclosed an area 40 m. in diameter. Their occupants lived by cultivating cereals which they reaped with crescentic sickles made from a single flint flake and, on the Austrian lakes also apples and beans, by breeding cattle, sheep, pigs and horses, by hunting and by fishing—in Upper Austria using double-pronged fish-spears of bone. Stone was still used for axes which might be mounted with antler sleeves and sometimes notched at the butt ⁶ and for weapons—knobbed polygonal battle-axes, spheroid mace-heads, daggers, hollow-based arrow-heads, and sling bullets.

But copper was generally used too both for flat axes and rhomboid daggers, like Fig. 116, c, and for ornaments. On the Austrian lakes and Ljubljansko Blat and at Vučedol it was also worked locally; for moulds have been found in the

¹ *Germania*, XXI, 149.

² *Bayerische Urgeschichtsfreund*, IV (Munich, 1924), 13 ff.; Childe, *Danube*, 125-8.

³ Franz, "Die Funde aus den prähistorischen Pfahlbauten im Mondsee" (*Materialien zur Urgeschichte Österreichs*, III), Vienna, 1927; Willvonseder, *Oberösterreich in der Vorzeit*, Vienna, 1933, 20-8 (Attersee); *WPZ.*, XXVI (1939), 135.

⁴ Childe, *Danube*, 210-12; Schmidt, *Vučedol*; Patay, "Korai Bronzkori," 24-8 ("Zok" culture).

⁵ Childe, *Danube*, l.c.

⁶ *MAGW.*, LXI, 74-80.

settlements (one from Ljubljansko Blat would yield an axe like Fig. 53, 5) as well as grooved hammer-stones. Indeed the Austrian lake-villagers, living at the head of navigation on the Traun¹, were supplementing the products of farming by exploiting local copper ores and shipping their winnings down the Danube's tributaries. So too Ljubljansko Blat lies



FIG. 137. Mondsee pottery (†).

at the head of navigation on the Save and may have been the precursor of the Roman station of Nauportus for trade from the Middle Danube basin to the Adriatic. Intercommunal specialization is further illustrated by "axe-factories" on the Enns² and elsewhere.

Everywhere, many of the vases are coarse and decorated only with cordons though they have flat bases and include handled cups and jugs. But on the Attersee and Mondsee and in land stations in Salzburg, vases were decorated with concentric circles incised in stab-and-drag technique and filled with white paste. In South-Western Hungary, Slavonia,

¹ Franz, "Mondsee," 11-12.

² WPZ., V, 19.

Bosnia, and Slovenia and even in caves on the Adriatic coast in Istria¹ the same and more elaborate designs were executed also by excision, imitating the chip-carving ornamentation of wooden vessels. In these regions the vases may have horizontal tunnel handles, as in Sardinia and Malta, or stand on cruciform feet as in the earlier Körös culture² and in Pontic Catacombs.

Clay models of animals were manufactured even on the Austrian lakes, of dressed human beings, huts, and tables too in Slavonia. Here the dead were buried in "pit-caves"³ like Pontic Catacombs.

At the Goldberg the Altheim settlement succeeded one occupied by Michelsberg folk, and at Vučedol "Baden" pottery preceded the local Slavonian ware. Accordingly the series should begin in period III and before the establishment of the Brenner trade route. On the other hand Bell-beaker influence has been detected in Slavonian pottery; the metal ware from the Austrian lakes includes not only pins of Unětician type, appropriate to period IV, but also forms of period V. So the Slavonian excised pottery is the immediate ancestor of Pannonian ware belonging to the Middle Bronze Age of Hungary. Thus the East Alpine cultures presumably cover the whole of period IV.

Now the motives decorating Mondsee and Slavonian pottery and some of its forms are surprisingly like those popular in the Early Cypriote Bronze Age, and parallels to the Mondsee daggers occur there too. So perhaps it was metallurgists from that island who initiated the exploitation of the copper lodes in the Eastern Alps. As cross-footed vases occur in Istria and excised decoration even at Chiozza (p. 238) and elsewhere in Upper Italy, the metal-workers may have come up the Adriatic and across the Julian Alps. But the basis of the culture is obviously Danubian or Körös. The polygonal battle-axes emphasize the parallelism with the First Northern culture. The figurines from Ljubljansko Blat (Brünn-dorf), the grave form and the cross-footed vases find striking parallels on the Pontic steppe in the Catacomb phase (p. 155). Finally a corded beaker comes from the lake dwelling at Notranje Gorice on Ljubljansko Blat.

¹ *MAGW.*, XLIII, 100.

² *Dolgozatok*, XV (1939), 91.

³ Schmidt, *Vučedol*, 41.

CHAPTER XVII

MEGALITH-BUILDERS IN ATLANTIC EUROPE

THE corridors of the Garonne and Rhône valleys offer passages to the Atlantic West from the Mediterranean. Along these valleys or their margins the megalithic idea was spread from colonies around the Gulf of Lions. But before its expansion the Western neolithic culture, revealed in the Cortaillod layers on the L. Neuchâtel, must already have spread over Central France to the Channel, and even during the megalithic period it could survive in some purity in sheltered parts of France as in Switzerland.

In South France itself the first explicit evidences of a neolithic culture are derived from caves that had been used for habitations or sepulchres also in palæolithic and mesolithic (Azilian) times and continued to be used right down to the Late Bronze Age. The stratigraphy observed by M. Heléna¹ of Narbonne, particularly in the Grotte de Bize, provides the best data available for the definition of a pre-megalithic phase of neolithic culture. From the lowest neolithic level come axes and adzes of fine grained stone, transverse and leaf-shaped arrow-heads of flint and plain pottery of Western type, all separated by a sterile layer from an Azilian occupation.² Elsewhere designs, scratched after firing as in phase II in Apulia and Liguria, belong to an equally early horizon. In a later occupation, Bize II, beads of callais and other materials were imported; axes were mounted in antler sleeves; tanged-and-barbed arrow-heads were used as well as leaf-shaped and transverse types; palettes were made for grinding paints, and the vases were richly decorated. The decoration now includes, besides scratched designs, knobs (as at Los Millares) and semi-circles and other motives, arranged in panels and executed by channeling, stab-and-drag or cardial technique. Vases thus decorated are alleged to appear before the first Beakers, but certainly continue side by side with them. Such vases are also common in megalithic tombs and represent Heléna's Chalcolithic I.

¹ P. Heléna, *Les Origines de Narbonne*, Toulouse and Paris, 1937 (authority for statements referring to South France not otherwise documented).

² J. Hawkes, in *Antiquity*, VIII (1934), 30.

Now scratched ware was associated with Balkan-Danubian currents in Apulia and Liguria (pp. 226, 238), but with the megalithic complex in Malta and Sardinia where it is pre-Beaker (p. 250). So it might have reached South France from Liguria before the megalithic cult or with it from Sardinia. Channelling and semicircles, with Early Minoan affinities (p. 32), usually go together with collective tombs. But in France

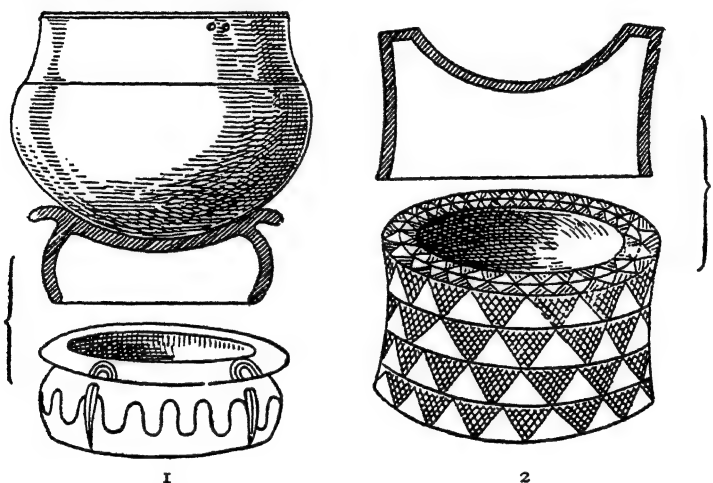


FIG. 138. Vase-supports in Chassey style: 1, Le Moustoir, Carnac; 2, Motte de la Garde, Charente.

the distribution of these decorated wares, particularly the scratched variety, does not coincide with that of megalithic tombs. So it is convenient to leave South France till the non-megalithic aspect of Western culture farther north have been described.

CHASSEY AND FORT HARROUARD

The famous but badly excavated station of Camp de Chassey¹ (Saône-et-Loire) in the Massif Central certainly marks one route in the expansion of Western neolithic culture. It is a fortified hill-top, and from it have been gathered many objects distinctive of the Cortaillod culture—tapering antler sleeves for axes, plain leathery pots, and grooved tine pendants. But the

¹ Déchelette, *Manuel*, I, 559; *L'Anthr.*, XXXVII (1927), 459.

collectors failed to separate these from types proper to Middle or Upper Neolithic in the Alps and Chalcolithic I in South France—sleeves like Fig. 135, B, perforated stone axes, and spheroid mace-heads on the one hand, tanged arrow-heads, palettes and pottery decorated with fine scratched patterns on the other. The latter ware is so abundant at the site that it is generally termed Chassey ware. The vase-support (Fig. 138)¹ is a distinctive shape. Sherds decorated in this style have been found at Michelsberg, but it belongs to a later phase of Western culture than that illustrated at Cortaillod and presumably reflects fresh influence from the Mediterranean coasts.

After crossing the Massif Central the neolithic colonists reached the downlands of Northern France, an area rich in flint and apparently already inhabited by hunters of the Forest culture.² In the oldest neolithic settlements yet recognized here, much of the gatherers' equipment seems to have been adopted by the Western colonists—notably core-axes and flake-axes like those of Ertebølle, transverse arrow-heads. The best picture available is provided by Fort Harrouard³ (Eure-et-Loire) a promontory camp about 17 acres (7 hr.) in extent, where Father Philippe could distinguish two neolithic strata.

The villagers lived by cultivating indeterminate grains and breeding mainly horned cattle; they kept also some pigs and goats and a very few sheep too, but relied very little on hunting or fishing.⁴ They lived in irregular oval huts partly excavated in the ground⁵ and dressed in woven fabrics using whorls for spinning and clay loom-weights in weaving. The carpenter used polished axes of imported stone occasionally, but relied mainly on the "mesolithic" flint hatchets and "picks", together with rare antler axes.⁶ Besides transverse arrow-heads the bowman sometimes used triangular ones. Before

¹ *BSPF.*, XXVII (1930), 268-276.

² This is the truth underlying Bosch-Gimpera's thesis of the existence in North France of a "culture de silex"—just another way of saying that in this area rich in flint but poor in fine-grained rocks, flint was the normal material even for axes, cf. *Rev. Anthr.*, XXXVI (1926), 320.

³ Philippe, "Cinq années de fouilles au Fort Harrouard" (*Société normande d'études préhistoriques*, XXV bis), Rouen, 1927.

⁴ The actual proportions are: cattle 68 per cent, swine 18 per cent, sheep 10 per cent, goats 1.5 per cent, game 2.5 per cent; *L'Anthr.*, XLVII (1937), 292.

⁵ *L'Anthr.*, XLVI, 270-1.

⁶ *L'Anthr.*, XLVI, 559.

the end of the period Grand Pressigny flint was imported, as were amber beads and arc-shaped pendants of schist.¹

The pots, baked in the fort in tiny kilns, are typically Western but include besides simple leather forms, baking plates as in the Michelsberg complex, vessels with multiple tubular lugs perforated vertically and horizontal tubes expanding at the ends like the horned lugs of Troy I, and vase-supports and other vessels decorated in the Chassey style.

Though there is a megalithic tomb in the valley in sight of the camp, villagers were buried extended, or in one case contracted, within the enclosure.² Female figurines were modelled in clay, a quite exceptional cult practice within the Western cycle.

Judging by the pottery, other sites in North France, notably the celebrated fortified station at Le Campigny (Seine Inferieure) (once made the patent station for a mesolithic culture) and the Camp de Catenoy (Oise) were occupied at the same time as Fort Harrouard I. At that station the second neolithic stratum illustrates a development of the older culture. While cattle-breeding predominates, a large breed of *Bos brachyceros* now co-existed with the small cattle of the older herds. Goats had died out, but game bones now amount to as much as 8 per cent of the total. And oysters and other shell-fish were imported from the coast. Finished implements, such as daggers and lance-heads of Grand Pressigny flint, were also obtained by barter. But the old types of tools including the "mesolithic" core and flake-axes were still retained. The pottery shows a development of the Chassey style with much coarser incisions combined with rusticated wares.

Since the late Chassey style inspires the decoration of "Incense Cups" at the beginning of the Middle Bronze Age in Southern England, it must follow that Fort Harrouard II falls at least into the "Beaker" period of the West; it may indeed outlast it since, as on the Swiss lakes, the record of settlement is continued only by the Late Bronze Age occupation of Fort Harrouard III.³ For all we can tell, the pastoral communities of Northern France preserved their neolithic economy and

¹ *L'Anthr.*, XLVI, 604.

² *L'Anthr.*, XLVI, 541 f.

³ But besides Late Bronze Age pins the crutch-head type occurs, as in the Copper Age lake-dwellings, Philippe, "Cinqe Années," pls. XI, 11 and XVIII, 19.

equipment unaffected by the megalithic movement, the Beaker expansion and the subsequent development of the Danubian and Britannico-Hibernian commercial systems in the Bronze Age.

Even Brittany may have been reached by the neolithic herdsmen in pre-megalithic times, who would have joined forces with survivors of the Tevieg strand-loopers. The stone-walled camps of Croh Collé and Lizo have indeed yielded pottery of the channelled and late Chassey styles current in the megalithic tombs of the peninsula. But there are groups of small cist graves some of which have yielded plain Western pottery remarkably like that of Cortaillod,¹ others Chassey ware and horned lugs. Sometimes, notably at Manio, these cists are covered by an elongated mound of earth and stones, the plan of which offers the nearest Continental analogy to the British long barrow.²

THE MEGALITHIC CULTURE OF SOUTH FRANCE

Megalith-builders, landing round the Gulf of Lions, diffused their funerary practices and architecture westward and northward. A cemetery of superb gallery graves on islands in the Rhone near Arles should belong to a commercial colony, a French counterpart of Los Millares.

A few passage graves were erected in Catalonia³ and there is quite a group of corbelled passage graves and cists with short entrance passages in Provence.⁴ The Provençal megaliths may contain as many as forty-five corpses accompanied by leaf-shaped arrow-heads, buttons with V-perforation, beads of stone (jadeite) and Beakers, and some chambers are covered by long cairns. The inspiration here is presumably Almerian.

The great majority of the collective tombs, west of the Rhône, in South France and, beyond the Pyrenees, in Catalonia and the Basque Provinces, belong to the family of gallery-graves. Near the coast monumental galleries like Castellet

¹ *L'Anthr.*, XLIV (1934), 486-9.

² *Antiquity*, XI (1937), 441-452.

³ Pericot, *Civilización megalítica*, 25.

⁴ *Afas.*, 1906, 665-674; Goby, "Dolmen de la Verrerie vieille," *Mem. de l'Institut de Fouilles de Provence*, 1929; "Les Dolmens de Provence," *Rodania, Congrès de Cannes-Grasse*, 1929; Hemp, *Ant. J.*, XIV, 277-280; *CPF.*, 1896.

and Bounias near Arles¹ are cut in the rock but roofed with slab lintels and covered by round barrows. Segmented cists occur in Catalonia (Puig Rodo), in the Basque Provinces² and at La Halliade³ near Tarbes; that at La Halliade was 14.2 m. long, divided by septal slabs into seven compartments with a lateral compartment added at one end and covered with a cairn of stones. Others like St. Eugénie near Carcassonne are subdivided by internal portals.⁴ All such reproduce in a somewhat barbarized form the plans of the Sardinian Giants' Tombs and of the Balearic navetas and rock-cut tombs and

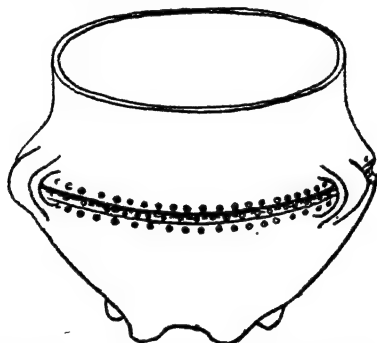


FIG. 139. Polypod bowl, La Halliade ($\frac{1}{4}$).

form a typological link between these and the segmented cists of North Ireland and the Clyde. On the analogy of the latter it may be inferred that they go back to pre-Beaker times, and are contemporary with the burials of Chalcolithic I in the caves. Megalithic architecture and funerary rites were presumably introduced by chiefs from the West Mediterranean islands among a mixed population (round heads and long heads occur in all tombs) already accustomed to collective burial in natural caves. These chiefs, however, adopted the native superstitions about trephining and eventually even cremation. And their architecture declined. The post-Beaker tombs of the Cevennes⁵ and Pyrenæan slopes are abbreviated versions of the older galleries.

¹ *Arch.*, LXXVI, 150, and Cazalis de Fondouce, *Les Allées couvertes de la Provence*, 1873-8.

² Pericot, *Civilización megal.*, 27, 101, 117, 131-2.

³ *Mat.*, 1881, 522.

⁴ *BSPF.*, XXVII (1930), 536-9; the tomb contained 300 corpses, at least 7 beakers, 12 palettes, gold beads, tanged arrow-heads.

⁵ Chantre, *Études paléolithologiques dans le Bassin du Rhône*, II, "Age du Bronze," gives inventories.

If the latter were built by megalithic chiefs in Chalcolithic I, their founders were soon followed by Beaker folk, whose relics are found in all the larger tombs and stratified above the layers containing the first channelled wares in Heléna's¹ caves. They should then represent a second layer of aristocracy.

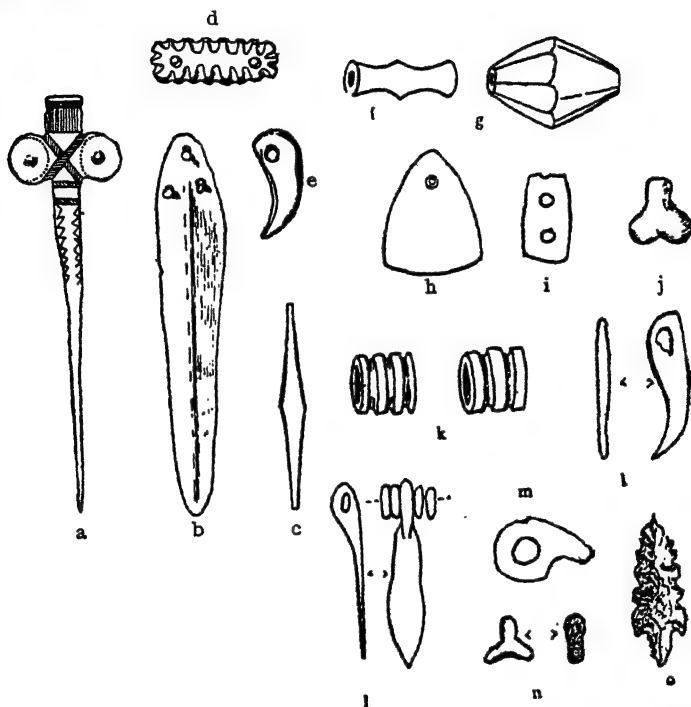


FIG. 140. Late Chalcolithic types from Cevennian cists: a-e, Liguise; f-i, Grotte d'en Quisse, Gard; j-o, "dolmens" of Aveyron (3).

They may have come in quest of ores.² They certainly used copper and gold and organized some machinery for the distribution of these substances. The earlier burials of the Beaker period (Heléna's Chalcolithic II) are accompanied by West European daggers,³ tanged-and-barbed flint arrow-heads, wrist-guards plated with gold leaf strips like Fig. 109, 4.⁴

¹ Heléna, *Origines*, 102, n. 1; types from the "dolmens" not represented in the caves have been added in the text here.

² Copper was actually mined in Hérault in prehistoric times, *L'Anthr.*, XXII (1911), 413.

³ Castellet, Puig Rodo.

⁴ Castellet, La Halliade.

schist palettes, beads of gold ¹ and callais and Beakers decorated in classic style or with spiral cord impressions.² Perhaps to this period or the next belong polypod bowls with grooved shoulders ² related to Scottish and Irish Food Vessels (Fig. 139).

But the Beaker fashion lasted for several generations and specialized local styles arose in South France and Catalonia assigned by Heléna to Chalcolithic III. To the same phase he attributes serrated and long-tanged arrow-heads (Fig. 140, o), and lance-heads polished and then flaked as in predynastic Egypt. Beads of amber and jet and trinkets of poor bronze were now imported. Half-spool beads,³ like Fig. 122, a, c, from the caves attest contacts with Sardinia (p. 253). Grooved and winged beads (Fig. 140, k, i, n) from caves ³ and Cevennian cists,⁴ are presumably inspired from the East Mediterranean and furthermore establish a synchronism with the Chalcolithic lake-dwellings. A segmented fayence bead, imported from Egypt, was found with the foregoing types in the sepulchral cave of Grotte du Ruisseau (Monges) ⁵ and implies that Chalcolithic III lasted till 1400 B.C. The beakers that distinguish it are found even in large galleries,⁶ but in the caves and some Catalan cists smooth pots occur too, including carinated cups with thumb-grip handles ⁷ exactly like the South Italian specimen shown in Fig. 112, 3.

Chalcolithic III in South France was accordingly already contemporary with the Bronze Age in Almeria, Central Europe, and Brittany. But despite the local ores and proximity to Sardinia, the post-Beaker Chalcolithic IV layers of the caves and the small megalithic cists of Catalonia and the Cevennes still illustrate an essentially neolithic economy. Save for British imports in Vendée and some hoards of Danubian bronzes east of the Rhône, Early and Middle Bronze Age metal types are practically unknown in South France. The tools and weapons, deposited in the communal ossuaries are still mainly of stone as in the preceding phase. Only a few imported bronze

¹ St. Eugénie.

² La Halliade.

³ Heléna, "Les Grottes sepulchrales de Monges," Toulouse, 1925, pl. VI, 2 (Ruisseau).

⁴ Chantre.

⁵ Heléna, "Les Grottes," pl. V, 49—wrongly termed "stone".

⁶ e.g. Eugénie.

⁷ e.g. Ruisseau and Falaise, Heléna, "Les Grottes"; Buffens (M. Carcassonne); Cueva de la Foie Bor, Catalonia (*Anuari*, 1916-1920, 492); cist of Puig ses Forques, Pericot, *Civilización*, 41.

daggers,¹ bulb,² trefoil,¹ and racquet³ pins derived through Switzerland from the Unétician repertoire, beads of fayence and even iron⁴ prove that this Cevennian "Copper Age" is in fact contemporary with the advanced Bronze Age, period V in other lands. And it is in this period that pottery decorated with applied ribs, such as Bosch-Gimpera regards as the earliest in France, becomes most typical though it goes back to Chalcolithic II. But this Copper Age persisted unchanged till Late Bronze Age—Hallstatt times when invaders from Central Europe established a new economy.

Here we have a classic instance of commerce used mainly for ritual ends—the provision of magic substances and charms—and of a culture devoted to spiritual rather than material goods. The pursuit of these involved some remarkable achievements in addition to the erection of megalithic tombs. A large number of the skulls from the Cevennian megaliths and from the caves⁵ had been trephined, some while their owners were still alive! As the cranian amulets produced by this operation were found in Cortaillod sites in Switzerland, the practice presumably goes back to pre-megalithic times in South France, though it persisted like so much else. In Aveyron, Gard, Hérault and Tarn monoliths were carved with representations of a female divinity armed with an axe⁶; one such statue-menhir was used as a lintel in a corbelled megalithic tomb at Collorgues, Gard (Fig. 141).⁷ Clearly this is no "portrait statue" but represents the same deity as the citizens of Troy I carved also on a monolithic stele. We shall meet her again in the Marne valley. Presumably these statue-menhirs mark her route northward, but otherwise they are undated. Sculpture and surgery in South France developed outside the frame of urban life and without relation to practical ends, as we understand them, in a society whose material culture remained fossilized for perhaps a thousand years.

¹ Liquisse, Gard—*Rev. Ét. Anc.*, XIII, 435.

² Hélène, *Origines*, fig. 64.

³ St. George de Levezac, Lozère, *Mat.*, 1869, 328.

⁴ *CIA.*, London, 1868, 354 (subsequently suppressed).

⁵ In Lozère 52 cases come from "dolmens", 105 from caves, Déchelette, *Manuel*, I, 474 f.

⁶ *Rev. Anthr.*, XLI (1931), 300 ff.

⁷ *Afas.*, 1890, 629; *Rev. Anthr.*, XLI, 362; the usual plans are wrong.

THE SEINE-OISE-MARNE (SOM) CULTURE

The adoption of the megalithic faith by a forest population on the chalk downs of Champagne and round the Paris basin, produced a remarkable culture, known almost exclusively from collective tombs and termed the Seine-Oise-Marne culture (abbreviated SOM). The burial-places may be natural caves,¹ artificial caves hewn in the chalk,² or a specialized type of gallery grave. In the Marne³ the rock-cut tombs form regular cemeteries; there are some fifty in the valley of Petit Morin alone. All are rectangular chambers entered by a descending

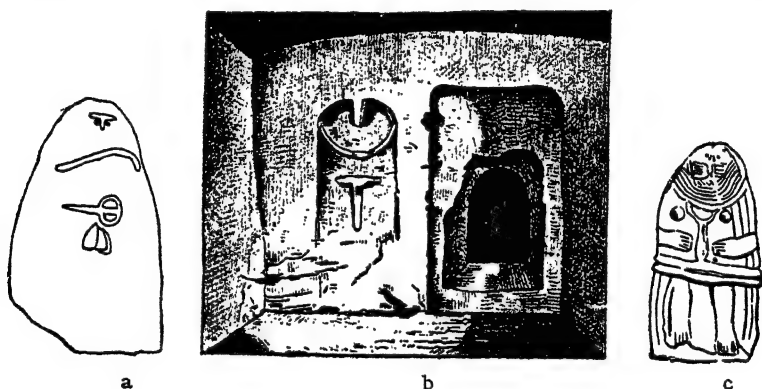


FIG. 141. Statue-menhirs from Gard and sculptured tomb, Petit Morin (Marne).

ramp like the dromos of a Mycenæan tomb. A few are more carefully excavated than the rest and are provided with an antecella on the walls of which may be carved or sketched in charcoal representations of the same funerary goddess, bearing an axe,⁴ as appears on the statue-menhirs of the Midi (Fig. 141). While the smaller tombs contain forty or more corpses (including some cremated bones), not more than eight bodies were deposited in the more elaborate chambers, but the funerary furniture in them is much richer. They accordingly belong to "chiefs", while poorer common-folk were crammed into

¹ e.g. Vaucelles, Narmur, Loë, *La Belgique ancienne*, I, 144.

² In Marne and also Oise, *Mem. Soc. académique d'Archéol. du Dep. de l'Oise*, IV (Beauvaix, 1860), 465.

³ J. de Baye, *L'Archéologie préhistorique*, Paris, 1884; cf. also *BSPF.*, VIII (1911), 669; *Gallia*, I (1943), 20-5.

⁴ *Rev. Anthr.*, XLI, 371-3.

family ossuaries. The gallery graves in the valleys of the Aisne, Seine, Oise, and Eure¹ are generally built of slabs erected in a long trench, a compartment at one end, divided from the rest by a porthole slab, serving as the entrance (cf. Fig. 96). The funerary goddess² reappears in the entrance, generally more conventionalized than on the Marne, so that only her breasts are recognizable.

The grave-goods disclose a warlike population living by stock-breeding and hunting, but almost certainly also tilling the soil. Its rôle in flint mining is uncertain, but Grand

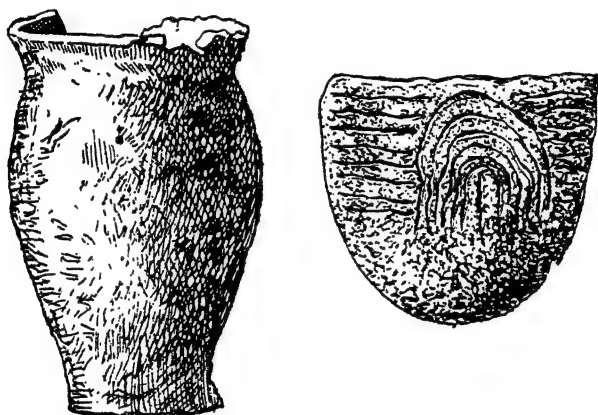


FIG. 142. Horgen pot from Paris cist (Mureaux) (♂), and channelled vase from Conguel, Morbihan (♂).

Pressigny flint was obtainable, and the chieftains of the Marne secured even beads of amber, callais and rock-crystal and small copper trinkets. Even flanged axes of bronze have been recovered from SOM gallery graves.³ The normal grave gear consisted, however, of polished flint axes, normally mounted in perforated antler sleeves, antler axes with square-cut shaft-holes, very numerous transverse arrow-heads together with a very few leaf-shaped ones, daggers of Grand Pressigny flint and characteristic splay-footed vases of rather coarse ware (Fig. 142). The ornaments include shells, bracelets, rings and arc-pendants (Fig. 143) of stone, a leg amulet of antler,⁴ axe-

¹ Déchelette, *Manuel*, I, 397 ff.; *Rev. Arch.*, XXVII (1928), 1-13; Forde, *Am. Anthr.*, XXXII, 63-6; *AsA.*, XL (1938) 1-14.

² *Rev. Anthr.*, XLI, 371-3.

³ Breuil in *Afas.*, 1899, 590.

⁴ *Gallia*, I (1943), 24.

amulets and cranian amulets. Nearly one-third of the population was round-headed, less than a quarter really dolichocranial. A relatively large number of skulls have been trephined, as in the Midi.

The tomb-plans and sculptures and the trephined skulls show that the megalithic complex reached the Seine-Marne area from the Lower Rhône; the local imitation of the Egyptian-Early Ægean leg amulet is satisfactory proof of East Mediterranean influence; the round-headed skulls and the flint work suggest that the bulk of the population was recruited from mesolithic stocks. But the pottery, so closely allied to Horgen pottery of Switzerland, raises the possibility of a pre-megalithic culture of neolithic type, indebted for its grains and domestic stock perhaps to Danubians as well as Westerners; for some pottery from the Marne,¹ from the Somme,² and from Villejuif near Paris³ and *Spondylus* bracelets from Frignecourt,⁴ Marne, suggest an infiltration of Danubian peasants even to the Paris basin.

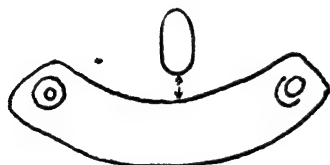


FIG. 143.
Arc-pendant of stone (§).

The megalithic SOM culture itself lasted for a long time. The bronze axes from some gallery graves imply a persistence into the Middle Bronze Age, and the funerary record discloses nothing beside

the collective tombs themselves to occupy that or the preceding Early Bronze Age. But before then the prolific pastoralists had been forced to find an outlet for their growing numbers in colonizing expansions. To the south two porthole dolmens⁵ in the Cevennes and one in Vienne might be attributed to SOM colonists, but that the idea itself came from the South. Westward the whole complex with its specialized gallery graves, porthole slabs, and appropriate splay-footed vases reached Brittany and even Jersey, but not Guernsey, while beakers were still current there. To the north-east

¹ At Anthie near Clàon; Chenet in *Bul. de la Soc. d'Arch. champenoise*, 1926, 4.

² *Rev. Arch.*, XXV (1894), 264.

³ *L'Anthr.*, VII (1897), 388.

⁴ *Rev. Éc. Anthr. Paris*, 1901, 291.

⁵ Déchelette, *Manuel*, I, 403; *Rev. Éc. Anthr.*, 1906, 283.

gallery graves of the Paris type occur in Belgium and even Westfalia. Finally the long cists of Montelius' period IV in South Sweden not only reproduce the Paris plan but also contain splay-footed vases of degenerate SOM form.

From this expansion the chronological limits of the megalithic phase of the SOM culture can be deduced. It arrives fully formed in Brittany while beakers¹ were still current there. Its Swedish colonies are not earlier than period IV of the Danubian series, but the furniture (collared flasks) of the gallery grave at Züschen, Hessen, means that the Seine type reached Germany in Danubian III. And arc-pendants establish a partial synchronism with Fort Harrouard I. The beginnings of the megalithic phase in the Paris basin and Champagne cannot therefore be much later than in other parts of Northern and Western Europe. On the other hand it must have persisted locally into a period when bronze was in general use in Central Europe as in Britain. Though they could obtain amulets and precious stones for funerary ritual, the Marne chiefs did without metal weapons and did not use their surplus wealth for the encouragement of trade to supply such regularly.

THE ARMORICAN MEGALITHIC CULTURE

In megalithic times the Armorican Peninsula with its extension to the Channel Islands became a goal of pilgrimage so that a bizarre assortment of cultures was superimposed on the primary Western neolithic described on p. 297. Brittany offers the first land-fall on the northward voyage from the Iberian Peninsula to Cornish tin-lodes and Irish gold-fields and sets the limit to terrestrial wanderings in search of isles of the blest beneath the setting sun. Moreover, its old rocks contain gold, perhaps also tin and callais.² The densest and most varied concentration of collective tombs in Europe is to be found round the Gulf of Morbihan³ but from this centre the tombs spread coastwise to the mouth of the Loire and to Jersey (still perhaps joined to the Continent in megalithic times) and

¹ A small fragment of Beaker was found in the SOM gallery at Benne-mont (S-et-O), *Man*, XXIX (1929), 18.

² Forde, l.c., 85.

³ Types summarized by le Rouzic, *L'Anthr.*, XLIII (1933), 233-248; for Guernsey, T. D. Kendrick, *Archæology of the Channel Islands*, I (1928), for Jersey, J. Hawkes, *Archæology of the Channel Islands*, II (1939).

Guernsey. The diverse tomb-plans and the heterogeneous articles constituting the furniture of every sepulchre indicate the varied traditions that went to make up the Armorican culture and the complexity of their interweaving.

Corbelled passage graves are concentrated on the coasts and Islands and are obviously inspired by Iberian, immediately by Portuguese, models. The translation of the tholos into the orthostatic architecture, more suited to the local rocks, produces a megalithic passage grave, often P-shaped in plan (Fig. 144),

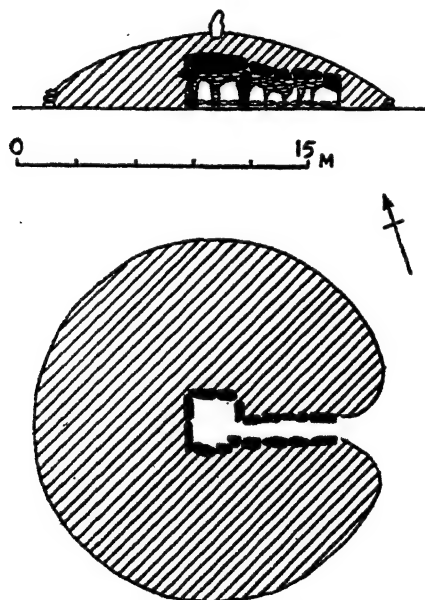


FIG. 144. Passage Grave, Kercado, Morbihan.

rarely with a lateral cell, as the standard type for Morbihan, while undifferentiated passage graves, like the South Spanish, are commoner in the Channel Islands. The gallery grave¹ on the other hand exhibits a more inland distribution and does not cross the sea to Guernsey. Accordingly the idea was brought by land from the Paris basin by migrant pastoralist families. Divergent variations on the exotic models were devised locally. Undifferentiated passage graves with one or two pairs of lateral chambers, arranged like transepts on either side of the

¹ Forde, *Man*, XXIX, 80; *Am. Anthr.*, XXXII, 74.

principal gallery may be derived from tholoi with lateral cells as at Los Millares and are common to the peninsula ¹ and the Islands (La Hougue Bie, Jersey,² and Déhus, Guernsey³). Passage graves with a bent corridor and gallery graves similarly "angled" are peculiar to Armorica.

Most tombs were covered by a cairn or barrow, generally round and carefully constructed, but sometimes two or even three tombs are covered by a single mound which may then be oblong. Elaborate carvings, including representations of halfted axes and human feet, are a feature of the megaliths of Morbihan.⁴ And in Brittany the tombs often contain remains of cremated skeletons, a rite doubtless due to some secondary foreign influence.

Most tombs have been violated in Roman times and further disturbed in the nineteenth century, so that the grave-goods do not contribute as much help as might be expected to unravelling the components of the megalithic complex and establishing the sequence of events. Tombs of most types contain Beaker ware, proving that the Paris galleries had arrived and the local variants been elaborated during the Beaker phase. But the number and variety of the beakers prove that this period was a long one. Z. le Rouzic⁵ and Jaquetta Hawkes⁶ assign to a pre-Beaker phase the corbelled passage graves of Morbihan and Jersey; they certainly contain no Beaker ware, but one at Parc Guerin yielded a segmented fayence bead⁷ which, if primary, would imply continued use into the fifteenth century B.C.—i.e. the post-Beaker period equivalent to El Argar in Spain and Unétician in Central Europe. That some megaliths are really pre-Beaker is established by the succession of burials in the passage grave (one wall of which was formed of natural rock) at Conguel,⁸ Quiberon. There the later interments only were accompanied by beakers, the earlier by vases bearing channelled semicircle patterns as in Chalcolithic I of South France (Fig. 142, 2). This fabric

¹ *L'Anthr.*, XLIII, 242; *Antiquity*, XI, 455.

² Société Jersiaise, *Bulletin*, St. Helier, 1925.

³ V. C. C. Collum, "Re-excavation of Déhus," *Trans. Soc. Guernesiae*, 1933.

⁴ Pecquart et le Rouzic, *Corpus des signes gravés*, Paris, 1927; *Préhistoire*, VI (1938), 1-48.

⁵ *L'Anthr.*, XLIII, 233-5; XLIV, 490-2, so Breuil, *Préhistoire*, VI, 47.

⁶ *CISPP.*, Oslo, 1936; *Archæol. Channel Islands*, II, 90, 248.

⁷ *L'Anthr.*, XLIV, 508; *Arch.*, LXXXV, 221.

⁸ *BSA.*, Paris, 1892, 41.

is found in other tombs too, and in the fortified settlement at Croh Collé.¹ It denotes connections with the Pyrenees or Portugal.

Chassey pottery, chiefly in the form of vase-supports, is represented in many tombs on the Mainland and in Jersey (Fig. 138). In that island it was found below the Beaker layer in the stratified settlement at le Pinnacle.² It was presumably introduced by land from Central France and the first connections with Grand Pressigny were probably established at the same time. Neither Chassey ware nor Grand Pressigny flint reach Guernsey.

The Beaker-folk seem to have come by sea; they reached even Guernsey, but on land have left only one grave between the Garonne and the Loire and that not far from the coast.³ Besides the classic rouletted style, cord ornament is common on Breton beakers, while specifically South French variants are missing. Wrist-guards⁴ are represented by a gold strip from Mané Lud, like the South French ones, and a few doubtful stone specimens which may really be whet-stones. West European daggers have been found only in Finistère⁵ and on Guernsey.⁶

From the Paris basin came the SOM gallery grave, the porthole slab, carvings of a funerary goddess, characteristic spay-footed vases⁷ and arc-pendants.⁸ Finally from the North came an amber bead and a boat axe.⁹ But "collared flasks"¹⁰ are really local SOM pots, quite unlike the Northern vessels.

The culture which blended all these foreign elements preserved a rigidly neolithic aspect in Morbihan. Axes were made with pointed butts of fibrolith and greenstone. Large, thin and superbly polished specimens, obviously ceremonial

¹ *L'Anthr.*, XLIV (1934), 496, fig. 9, 8, and 12-16.

² *CISPP.*, London, 1932, 140; Hawkes, *Channel Islands*, 7, 162.

³ In a "small dolmen" near Trizay, Charente Inferieure, with a West European dagger, tanged-and-barbed arrow-heads and gold ribbon; *BSPF.*, XXXVIII (1941), 45.

⁴ *L'Anthr.*, XLIV, fig. 19, 11; *Rev. Arch.*, 1883, pl. XIV.

⁵ P. du Chatellier, *Les Epoques préhistoriques et gauloises dans le Finistère*, Rennes, 1907, 28; *Ant. J.*, VII, 17.

⁶ V. C. C. Collum, "Re-excavation of Déhus," *Trans. Soc. Guernesaise*, 1933.

⁷ Kendrick, *Axe Age*, 34.

⁸ Jersey, Kendrick, *Channel Islands*, 94.

⁹ *L'Anthr.*, XLIV, 504, fig. 14, 5 and 15.

¹⁰ From an angled passage grave at Lann Blaen (Morb.) and a SOM gallery at Trégastel (Côtes du Nord); *BSPF.*, XLIII (1946), 306.

and perhaps late,¹ are surprisingly common and were exported to Portugal and England. Celts with a knob at the butt end found stray in Morbihan seem to copy Egyptian adzes,² while double-axes of stone³ imitated the Minoan metal form or the "ingot axes" from Vögtland.⁴ For arrows transverse and tanged-and-barbed heads were preferred; leaf-shaped forms are exceptional.⁵ In addition to the foreign pottery absorbed, carinated bowls adorned with pairs of vertical ribs are a distinctively Breton variant on the West European tradition, replaced in Jersey by similar shapes decorated with horizontal lines and punctuations.

As charms were worn rather simple beads of talc, callais, rock-crystal, or gold, axe-amulets and bracelets of hammered gold. The callais and gold may have been obtained locally, but Grand Pressigny flint was certainly imported. Unless the Portuguese and South French callais be of Armorican origin the peninsula's exports must have been immaterial goods. Whatever they were, they were employed to obtain magical rather than practical materials. The whole society was so obsessed with funerary cult that material advancement was neglected.

The chronological criteria applicable to more materialistic societies cannot then be used for dating the megalithic culture in Brittany. Despite its neolithic exterior it may have lasted well into the Bronze Age elsewhere. In fact in Guernsey some megalithic tombs do contain "incense cups" and cinerary urns of types appropriate to the advanced Bronze Age of England. In Morbihan closed megalithic chambers under gigantic barrows at Tumiach, Mont St. Michel and Mané er Hroek are assigned to the Bronze Age by le Rouzic on typological grounds.⁶ But they contained ceremonial axes of greenstone, greenstone bracelets and beads of callais and rock-crystal that can be matched in more normal megalithic tombs.

¹ Some have expanded blades imitating copper axes, *Am. Anthr.*, XXXII, 87.

² Petrie, *Tools and Weapons*, Z., pl. XVII.

³ *L'Anthr.*, XLIV, figs. 14, 11 and 16, 1; *Ant. J.*, VII, 17.

⁴ Copper double-axes with a hole too small to take a shaft occur in Central France, Switzerland, and Southern Germany, *ZfE.*, XXXVII, 525; Childe, *Danube*, 177, 193; *BSA.*, XXXVII, 152-6.

⁵ *L'Anthr.*, XLIV, 500.

⁶ *L'Anthr.*, XLIII, 251-3; Forde, *Am. Anthr.*, XXXII, 76-9, notes that the supports are sculptured like those of normal collective tombs.

THE ARMORICAN BRONZE AGE

Throughout the Atlantic megalithic province, desire for a good burial stimulated production of surplus wealth; the erection of gigantic tombs and the importation of magic substances kept accumulated wealth in circulation. But it was not used to support professional smiths nor to purchase ores. In France graves furnished with bronze tools and weapons and hoards of bronzes begin in general only during the Middle Bronze Age when Tumulus-builders from Central Europe spread along the Massif Central. Only in Armorica is there a group of graves ¹ richly furnished with weapons of Early Bronze Age type.

The tombs in question are closed chambers of dry masonry, sometimes roofed by corbelling and always surmounted by a cairn. The dead were buried in them, generally but not always after cremation, on wooden planks (remains of coffins?), with arms and ornaments. The armament consisted typically of one or two flat or hammer-flanged axes, several daggers and



FIG. 145.
Breton Bronze Age
vase.

superb arrow-heads with squared barbs and tangs. The daggers are either round-heeled and strengthened with a midrib or triangular with grooves parallel to the edge and sometimes a rudimentary tang. In eight cases the wooden hilts (or scabbards) had been adorned with tiny gold nails forming a pointillé pattern. Ornaments include a ring-head pin ² and some spiral rings of silver and beads of amber. Pottery is

represented by biconical urns with two to four handles joining rim and shoulder (Fig. 145).

Evidently these graves belong to rich and warlike chiefs. They are concentrated ³ in the north and interior of the peninsula and in general avoid the principal megalithic centres where the old family vaults were presumably still in use. The Bronze Age war-lords can therefore hardly be descendants of the old megalithic chiefs or Beaker-folk, and owe nothing of

¹ *L'Anthr.*, XI, 159; XLIV, 511; *Bul. Soc. Arch. Finistère*, XXXIV (1907), 125; *Ant. J.*, VII, 18; *Les Trésors archéologiques de l'Armorique occidentale*.

² *Bul. Soc. Arch. Fin.*, XXXIV.

³ See map in *PPS.*, IV (1938), 65.

their equipment to these. Their silver probably came from Almeria or Sardinia. The ring-head pin is a Central European type. The grooved daggers seem related to the North Italian series and those from the Rhône valley in Switzerland (p. 289). But the chief source of metal and the dominant inspiration in metal-work must have been in the British Isles, where for instance gold-studded dagger hilts also occur. Relations with Britain were indeed so close that for a while Armorica and Wessex became a continuous cultural province.

Piggott¹ explains this continuity by an invasion of Southern England from Brittany. The cogency of his argument is diminished by the difficulty of finding a satisfactory continental origin for the Armorican Bronze Age culture. Hawkes² would derive it from the Central European corded ware and tumulus cultures but can cite only two isolated barrows (from Allier and Dordogne) between Brittany and the Rhine.³ In any case the connections with Wessex establish a partial synchronism between that "early Middle Bronze Age of Britain" that falls within the lower limits of Danubian period IV, about 1400 B.C. (p. 329). This dating is in turn confirmed by the limits provided by the Swiss and Italian prototypes for the grooved Armorican daggers. But the mysterious bronze-culture that emerges so abruptly from the megalithic night failed to develop. It is not till the very late Bronze Age that immense hoards reveal the inclusion of Brittany and the rest of France in a commercial system maintaining the regular distribution of metal.

¹ PPS., IV, 64 ff.

² *Foundations*, 312-14.

³ Apart from these burials (Déchelette, *Manuel*, II, 142, 147), the poor non-megalithic cists found in Vienne, Charente and Lozère (de Mortillet, *Origine du culte des morts*, Paris, 1921, 79 f.), might be Bronze Age but only one contained bronze. East of the Saône there are Early Bronze Age graves connected with the Swiss and Central European, but often containing polished flint or greenstone axes; *Rev. Préhist.*, 1908, 141; Déchelette, *Manuel*, II, 136 ff.; *L'Anthr.*, XXVIII, 64.

CHAPTER XVIII

THE BRITISH ISLES

ALL routes from the South hitherto considered, converge on Britain. It is the northern terminus of the "megalithic" seaway along the Atlantic coasts from Portugal; the land route across France is continued beyond the Channel by the South Downs; the Danube thoroughfare and the wide corridor formed by the North European plain converge on the North Sea coasts to be continued in Kent and East Anglia. And the British Isles offers to voyagers, migrants and prospectors inducements to settlement—downs and moors swept bare of trees, excellent flint, copper and gold, and above all tin. But islands they were already in neolithic times. Would-be colonists embarking in frail craft must discard unessential equipment and relax the rigid bonds of tribal custom.¹ Any culture brought to Britain must be insularized by the very conditions of transportation. Many streams contributed to the formation of British culture, but the blending of components already insularized inevitably yielded a highly individualized resultant.

Nor is Britain a unity. The Highland Zone of mountains and ancient rocks to the West and North is contrasted with a "Lowland Zone" of more recent formation in the South-East.² And beyond the Highland Zone lies Ireland. It is the Highland Zone with Ireland that yields tin, copper and gold. But the megalithic route alone leads thither directly. Cultures and peoples, desiring "short sea crossings", must land in the Lowlands and reach the Highland Zone only after crossing them and absorbing their already insular cultures.

Cultures arriving from the Continent often preserve their ancestors' lineaments recognizably in the Lowland Zone; in the Highlands they assume a mask of stubborn insularity.

Great Britain and Ireland were relatively well populated with mesolithic hunters and fishers. But a neolithic culture of distinctive Western type was first introduced by peasants who crossed to Southern England from North France and

¹ A. Toynbee, *A Study of History*.

² Fox, *The Personality of Britain*, Cardiff, 1938.

Belgium and did not mingle with the pre-existing food-gatherers. In Sussex the latter occupied the greensands, the neolithic peasants colonized the chalk.¹ The neolithic farmers owed hardly an item in their equipment to their mesolithic forerunners and competitors.

WINDMILL HILL CULTURE

The oldest neolithic culture is best known from a series of hill-top encampments² strung out all along the downs and uplands of Southern England from Eastern Sussex at least to Devon and probably to Cornwall. The classic site where this

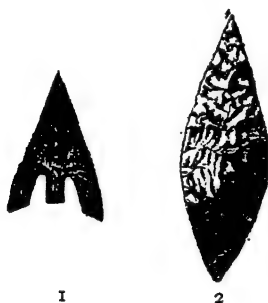


FIG. 146. Bronze Age and neolithic arrow-heads from Britain ($\frac{1}{2}$).

culture was first really defined—as recently as 1925!³—Windmill Hill, near Avebury, Wilts, must serve hereafter as the patent station. The hill-tops are girt with a system of three or four flat-bottomed ditches, interrupted at frequent intervals by causeways, as in Michelsberg camps, and supplemented by palisades. The areas thus enclosed are often small: the diameters of the inner ring lie between 250 ft. at Windmill Hill and 400 ft. at the Trundle, though there is room for settlement beyond it and Maiden Castle covered 12 acres. It is not yet clear how far the “camps” should be regarded as permanent villages rather than centres to which families, normally roaming in isolation, repaired periodically.

The camps’ occupants lived principally by breeding cattle³—of a robust breed, perhaps a cross between imported

¹ Clark, *Mesolithic Britain*, 90.

² *Antiquity*, IV (1930), 22–40; *Ant. J.*, XIV (1934), 100–133; XVII, 261; *SAC.*, LXXVII (1936), 60–92; *PDAES.*, I (1931–3), 180; II, 161.

³ *Ant. J.*, XIV, 128–9; *CISPP.*, London, 1932, 151.

short-horns and native oxen of *Bos primigenius* stock. But they kept a few sheep, goats and pigs and cultivated bread wheat and barley.¹ And naturally they hunted deer and collected nuts and shell-fish. The huntsman used leaf-shaped arrow-heads, Fig. 146, 2 (the transverse type of mesolithic folk occurs exceptionally at Windmill Hill). Axes were made of flint where this material is abundant and then include archaic "picks" as well as polished implements.

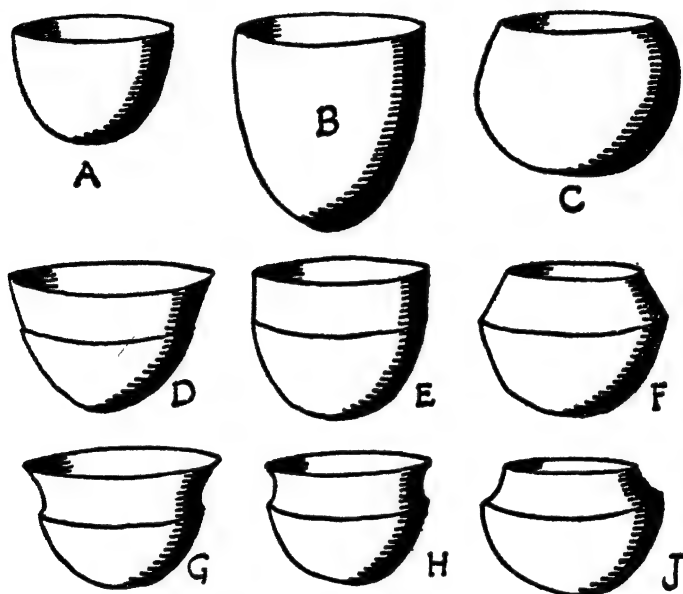


FIG. 147. Windmill Hill pot-forms. After Piggott.

Elsewhere, in Devon for instance, polished celts of fine grained stone competed with flint axes. In Southern England and Norfolk flint was systematically mined² by specialized groups of highly-skilled miners who must have lived largely by exporting the products of their industry. But while flint mining began in Windmill Hill times, it flourished more in the subsequent Beaker period. And in Norfolk and even Wiltshire Peterborough folk (p. 322, below) were associated with its exploitation. A textile industry is not clearly attested but

¹ *Det kong. danske Vidensk. Selskab, Biol. Skrifter*, III, 2.

² *Antiquity*, VII (1933), 166-183.

innumerable flint scrapers and characteristic brush-shaped combs of stags' antler emphasize the importance of leather-dressing.

The earliest Windmill Hill vases ¹ (Fig. 147) are leathery round-bottomed pots with simple rims and vertically pierced lugs for handles. In time a peculiar fashion of thickening the rim, by pressing down or rolling over the wet clay, and insular styles of decoration, notably flutings produced with the fingertips, grew up. In Devon and Dorset horned lugs were used as in Brittany and at Fort Harrouard. Ladles are attributed to the Windmill Hill equipment on technical grounds only.

A few figurines and phalli carved ² in chalk or bone, so rudely as to be rather dubious, are all that have survived of ritual paraphernalia. Skeletons or parts thereof lay in the ditches of some camps.³ In Man, and Scotland as in Southern England, cremation burials in cemeteries, sometimes within a ring ditch or circle of posts, have been found since 1947 ⁴ in neolithic contexts, but not certainly earlier than the megalithic tombs while unchambered long barrows may be equally late (p. 319).

Causewayed camps have so far been found only in Southern England, but Windmill Hill pottery turns up in a pre-Beaker horizon in the Cambridgeshire fens ⁵ embedded in an Atlantic peat overlaid by estuarine clays deposited at a time of marine transgression. It occurs too on the Lyonesse surface off the Essex coast, probably submerged by the same transgression. In the Highland Zone relics of Windmill Hill culture were collected from Ehenside Tarn in Cumberland, presumably the site of a lake-dwelling. And the so-called Campignian of Northern Ireland may denote an extension thither of Windmill Hill culture in pre-megalithic times. But elsewhere in the Highlands it is known only from "megalithic tombs" or settlements explicitly associated therewith. In time the culture lasted long. In several camps Windmill Hill ware is associated

¹ Piggott in *Arch. J.*, LXXXVIII (1931), 83-100; *PSEA.*, VII (1934), 373-382; *PPS.*, III (1937), 189-199.

² Figurines from Maiden Castle, Grimes Graves, Windmill Hill, phalli from Whitehawk, the Trundle, Blackpatch, Thickthorne; Childe, *PCBI.*, 39.

³ e.g. *Antiquity*, IV, 35; *Ant. J.*, XIV, 108, 112.

⁴ *Antiquity* XXIII (1949), 33; *PPS.*, XIII (1947).

⁵ *Ant. J.*, XV (1935), 317. The transgression is probably to be identified with that which submerged the Lyonesse surface in Essex (*PPS.*, II (1936), 178-210), and with the last transgression in Denmark.

with relics of the Beaker period.¹ But at the patent station the primary silting of the ditch was grass-grown when Beaker folk arrived, and at Maiden Castle, Dorchester, a "long barrow" was heaped, still in pre-Beaker times, over the camp's defences.²

However far back their arrival be placed, the bearers of the Windmill Hill culture reached England from Northern Gaul. Its pastoral economy, hill-top camps, leathery pots, arrow-heads and antler combs disclose it unmistakably as a branch of the great Western family.³ Most British types can be paralleled at Spiennes, Campigny, or Fort Harrouard, and in the non-megalithic Breton cists. But all the more specialized Continental traits—perforated antler sleeves and axes, baking plates, and the like—are missing. Had they been discarded and forgotten in crossing the Channel, or did the first herdsmen embark before they had learned to use them?

MEGALITHIC TOMBS

The megalithic idea was superimposed upon this pure neolithic culture. It was presumably brought by sea, and in fact tombs which adhere most closely to Continental models are located in the Atlantic provinces of Ireland and Western Scotland. Two main sources of inspiration can be detected with the aid of the architecture. Segmented cists, like the Pyrenæan, occur in Northern Ireland (Fig. 106), Man, and South-West Scotland.⁴ The chamber is generally covered by a disproportionately long cairn with a semicircular forecourt on to which the chamber opens so that the whole looks like an exaggerated Giants' Tomb. Tombs of the same family spread to the Hebrides, across Scotland down the Tay, and southward into Derbyshire and Wales.

The tombs contain up to sixteen corpses, normally inhumed but occasionally cremated,⁵ as in Brittany. They occur isolated as if they represented the burial place of a tiny

¹ *PDAES.*, I, 163; *Ant. J.*, XIV, 119.

² Wheeler, *Maiden Castle, Dorset*, 20; the "barrow" was anomalous, being one-third of a mile in length!

³ *Arch. J.*, LXXXVIII, 37-56; *PPS.*, I, 127-9.

⁴ Mahr, *PPS.*, III (1937), 343-9; *Proc. Belfast Nat. Hist. and Phil. Soc.*, 1932-3, 1-16; 1933-4, 80-103; 1934-5, 70-87; 1936-7, 20-42; *UJA.*, 1938, 50-78; for Man, *PPS.*, I, 75-81; for Scotland, Childe, *Prehistory of Scotland*, 25-32, and *Scotland before the Scots* (1946) 97-101.

⁵ *UJA.*, 1938, 66.

clan or an Einzelhof. Evidently their builders included influential southerners familiar with Pyrenæan funerary ritual and ceramic traditions, who can only have come by sea. Whether these picked up Windmill Hill folk on the way or found such already in occupation and established authority over them is quite uncertain.

Tombs of the passage-grave family are best represented in regular cemeteries along the Boyne and right across the central valley of Ireland.¹ The classic type here is a corbelled chamber with three cells grouped around it so that the whole plan is cruciform. The chamber is generally covered by a round cairn but at Carrowkeel one such chamber was placed at the small end of a long horned cairn! The stones forming the roofs, walls, and kerbs of many Irish passage graves are elaborately carved with spirals, conventionalized boats, and other figures. Breuil² has insisted on the similarity of these designs to Copper Age paintings in Spain, and Mahr³ has pointed out a striking parallel to Portuguese plaque-idols (Fig. 127, 2).

On the treeless moors of North Scotland⁴ corbelled passage graves were generally subdivided by paired jambs into three compartments (Fig. 148, 2) and buried under an extravagantly long horned cairn. In Orkney⁵ elongated chambers divided into "stalls" by paired transverse slabs with benches in the stalls (Fig. 149) or small groups of cells round a larger rectangular chamber (Fig. 148, 1) reproduce in dry-stone masonry and beneath oval or round cairns, albeit often in an artificial excavation, the plans of Balearic and Sardinian rock-cut tombs.⁶ The tombs of Caithness and Orkney may mark the route by which the passage grave idea reached Denmark. Elsewhere in Great Britain such tombs are rare. In the hinterland of the Bristol Channel approximations thereto occur under long pear-shaped cairns with a cuspidal forecourt.⁶ In some an elongated gallery, with one or two transepts as in Brittany (p. 306) and

¹ Mahr, *PPS.*, III, 349-352; for New Grange and Lough Crew, Coffey, *New Grange*, Dublin, 1912; for Carrowkeel, *PRIA.*, XXIX, C (1910-12); *PPS.*, IV, 239.

² *PSEA.*, VII (1934), 293 ff.

³ *PPS.*, III, 354.

⁴ Childe, *Prehistory of Scotland*, 32 ff.

⁵ *PSAS.*, LXVIII (1933-4), 320-350; LXIX, 325-351; LXX, 407-419; LXXI, 115-154; 297-308; LXXII, 193-216.

⁶ Crawford, *Long Barrows of the Cotswolds* (Gloucester, 1925); *Arch.*, LXXXVI, 119 f.; *PPS.*, IV, 188 ff.

the Channel Islands, opens on to the forecourt. Often, however, this ends in a dummy portal while one or more small chambers, in two cases entered through porthole stones, open on to the sides of the barrow. Finally both in South England, East Anglia, and Yorkshire there are "unchambered" long barrows covering no stone chambers. But traces of a wooden chamber were found at Wor Barrow, Dorset,¹ there are "pit-dwellings"—perhaps attempts at a rock-cut chamber—under several Yorkshire long barrows² and at Skendleby, Lincolnshire,³ and Maiden Castle, Dorset,⁴ the forecourt of the long cairn was reproduced in a timber revetment at the east end.

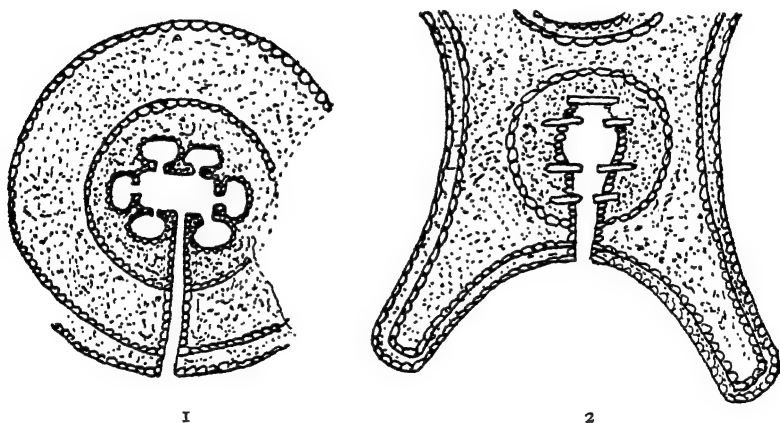


FIG. 148. North Scottish passage graves: 1, Quoyness, Sanday, Orkney; 2, Ormiegill, Caithness.

An almost slavish adherence to details of Iberic and Pyrenæan funerary architecture in Scotland and Ireland proclaims the South-Western origin of our tombs' designers. The interpenetration of several types and local divergences from standard plans indicate the complex relations and prolonged development of insular megalithic culture. The grave-goods justify the same conclusions.

Late and specialized varieties of Windmill Hill pottery and leaf-shaped arrow-heads were deposited with the primary burials in tombs of all groups save the Irish tholoi. Some

¹ *PPS.*, I, 119, fig. 3.

² *PPS.*, I, 124, fig. 7.

³ *Arch.*, LXXXV (1936), 46-9, 86.

⁴ Wheeler, *Maiden Castle*, 21.

Scottish ¹ and North Irish ² segmented cists contain also vases decorated with semicircles and other designs arranged in panels and executed either by channelling as in South France and Brittany or with twisted cord impressions, as in Denmark (Beacharra Ware, Fig. 142, 2). In Orkney and at least one tomb of the Boyne group ³ a distinct local style occurs, termed Unstan pottery—wide bowls decorated with alternating triangles hatched with heavy incisions or stab-and-drag lines.

Some tombs in all groups contain also Beaker ware or

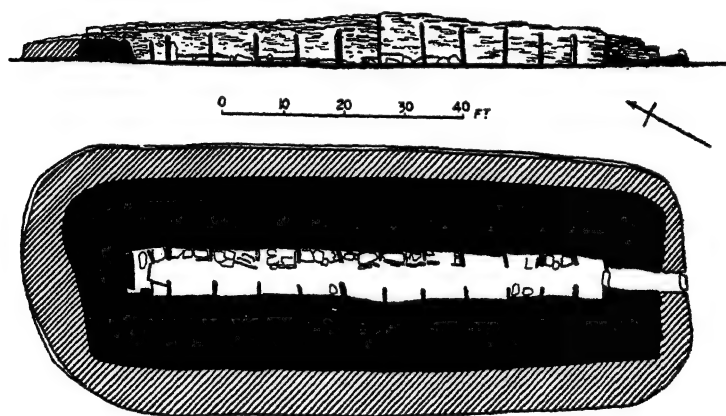


FIG. 149. Long stalled cairn, Midhowe, Rousay.

polished and slug knives proper to the same horizon. In Skye, the Hebrides ¹ and Anglesey, ⁴ however, the beakers were demonstrably associated with secondary interments, later than those accompanied by Windmill Hill or Beacharra ware. In Wessex, too, Wor Barrow and that at Maiden Castle had been piled up demonstrably before the arrival of Beaker folk, though the "barrow" at Maiden Castle straddles the abandoned defences of an earlier "neolithic" causewayed camp, and is in any case quite abnormal. The barrow at Skendleby, Lincolnshire, however, was not erected before B Beakers had reached the county, though it

¹ Childe, *Prehistory of Scotland*, 65-7.

² *PSEA.*, VII (1932), 62; *UJA.*, 1938, 70.

³ *JRSAI.*, LXV (1935), 320-4.

⁴ *Arch. Camb.*, LXXXVIII (1933), 223.

While these invasions were in progress, other groups emerge in Eastern Britain. The Peterborough culture¹ is just the British version of the neolithic Forest culture of the Eurasiatic plain and naturally is first and best represented on the east coast, along river valleys and round the Fens.

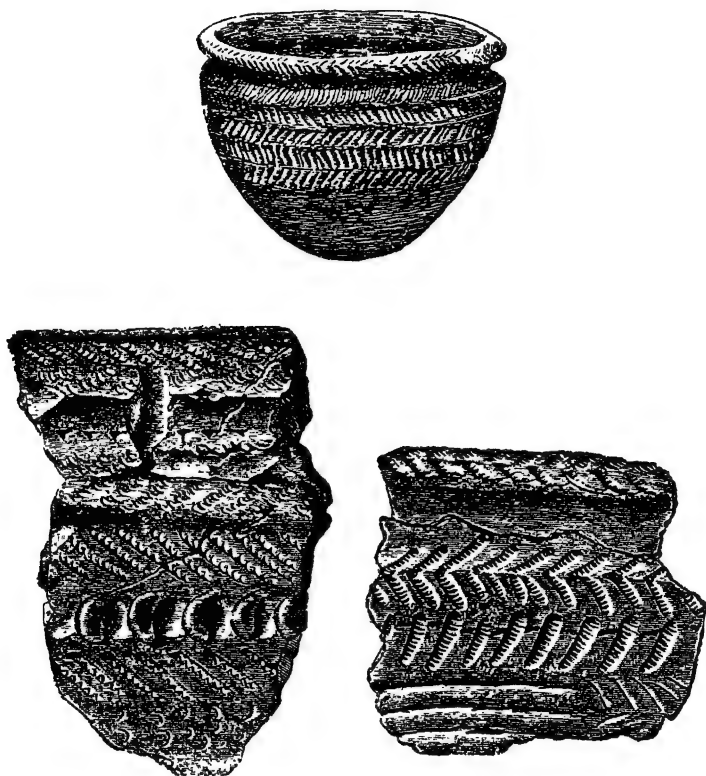


FIG. 150. Peterborough bowl from Thames ($\frac{1}{4}$), and sherds from West Kennet Long Barrow. By permission of Trustees of British Museum:

The economy was apparently still mesolithic. In hunting, lopsided derivatives of the transverse arrow-head² were used, but something was reaped with curved flint sickles made on one flint flake.³ The earliest pots have simple rims, like the

¹ *Arch. J.*, LXXXVIII, 58-66, 110-130; *PPS.*, IV, 55.

² *Arch. J.*, XCI (1934), 32-55.

³ Hawkes, *Foundations*, 214.

East Swedish¹ and are decorated only with pits. In the standard Peterborough ware the rims are thickened and the shallow bowls are richly decorated with "maggots" and the imprints of birds' leg-bones or combs (Fig. 150). Even this style had developed before the Lyonesse transgression.

During the Beaker period Peterborough folk spread westward to Galloway and Anglesey. Peterborough and Beaker wares are often found together, and Peterborough vases occur even in megalithic tombs in Wessex and Anglesey.² Some groups of Peterborough folk seem to have turned from gathering to industry and to have combined hunting expeditions with trade. Their pottery has been found in flint mines at Grimes' Graves, Norfolk, and they may have been responsible for transporting axes of Graig Lwyd stone from the factory in North Wales to Wessex³ and Anglesey.

The Skara Brae culture was due to pastoral communities who bred sheep as much as cattle and, like Peterborough folk, appear in East Anglia before the Lyonesse transgression.⁴ But during the Beaker period they spread westward as far as Wessex and northward right to Orkney. On the wind-swept islands they found ideal pastures for their flocks and herds, but were forced to translate into stone, dwellings and furniture elsewhere made of wood. Their huts,⁵ grouped in hamlets of seven or eight, and several times rebuilt on the old site, were some 15 ft. square. On either side of the central hearth are fixed beds framed with stone slabs on edge and covered with canopies of hide. A dresser stood against the back wall, there were cupboards above the beds and tanks let into the floor. As clothing, skins were worn for the dressing of which innumerable scrapers of flint and awls and other bone tools were made. Axes, of polished stone, were mounted in perforated antler sleeves. The pots, though badly fired, were flat-bottomed and decorated with grooved or applied ribs and knobs forming lozenges, wavy lines, and even spirals.

A good deal of the Skara Brae equipment might be derived from the Forest culture; the sheep might have

¹ From the buried channel of the Ebbsfleet stream, *Ant. J.*, XIX, 405-420.

² *Arch.*, LXXXV, 285.

³ *Arch. Camb.*, XC (1935), 209.

⁴ *PPS.*, II (1936), 191-201.

⁵ Childe, *Skara Brae*, London, 1931.

been taken from Beaker folk, but, like the antler sleeves, alternatively might have been introduced by an infiltration of SOM people from North France. In Orkney the culture retained its individuality till Beaker folk (with degenerate C Beakers) reached ¹ at length the remote islands. And elsewhere too it formed an important constituent of the later Bronze Age cultures.

Throughout Great Britain the Beaker folk came to form the dominant element in a very heterogeneous population. They even gained admission into communities using megalithic sepulchres, but eventually put an end to collective burial in Britain; in Ireland the practice persisted, the few Beaker folk who crossed over from England ² being absorbed in the native population. The invaders cultivated cereals and indeed ate more of them than the megalith-builders. But they were still pastoralists and probably introduced more extensive sheep-breeding. They purchased weapons of bronze and flints from the mines, and ornaments of gold, amber, and jet. They thus encouraged trade, but there is no evidence that they engaged themselves in the exploitation of these substances. Very few Beakers have been found in Cornwall and Ireland, and metal workers seem to have been excluded from the classes entitled to burial under a barrow or in a circle.

The Beaker aristocracy of Britain devoted their surplus wealth and energies to the erection of sepulchral and religious monuments carrying on the tradition of the megalith-builders. Circular fosses or rings of posts or stones had been an integral element in Battle-axe funerary practice even in South Russia. In Britain it finds its culminating expression in circles of huge stones or timber uprights like Avebury and Stonehenge. These monuments in Britain are not in all cases demonstrably sepulchral and could serve a useful secular purpose in the regulation of the calendar.³ The extravagant size of the uprights must, however, be due to the example of megalith-builders, and it must have been they who invested particular stones with such sanctity that it was felt essential to bring monoliths from Prescelly in South-West Wales all the way to Wiltshire for re-erection in Stonehenge.

¹ *Ant. J.*, XVIII, 402; *PSAS.*, LXXIII (1938-9), 26.

² *UJA.*, 1938, 178-188; Childe, *PCBI.*, 96.

³ Hogben, *Science for the Citizen*, 69.

THE DAWN OF THE MIDDLE BRONZE AGE

The Beaker period in Britain coincides effectively with the Early Bronze Age. By its end a substantial cultural uniformity had been established throughout the Island. This uniformity was broken up and the British Middle Bronze Age ushered in with the establishment in Wessex of a new culture.¹ It is distinguished by the emergence of a class of rich chiefs or aristocrats, by the general adoption of cremation, by new weapons—grooved daggers like the Armorican ones described on p. 310—and new pottery fashions—small vessels decorated with finely incised and punctuated ribbons or with knobs—grape cups. These pots clearly derive from the later Chassey ware of France; the grooved daggers resemble the Armorican ones described on p. 310. Hilts studded with gold nails, arrow-heads with squared tangs-and-barbs, sceptre-mounts and



FIG. 151. Segmented fayence beads, Wilts. (†). By permission of the Trustees of the British Museum.

other Armorican types occur in the Wessex barrows too. The Wessex and the Armorican Bronze Age cultures are closely interrelated, and Piggott has argued that the rich Wessex chieftains were conquerors, come from Brittany. However, Beaker, Skara Brae, and Peterborough traditions survived and assert themselves in the Cinerary Urns often associated with the small vases of Chassey ancestry.

Despite very numerous barrows, settlements of the Wessex and contemporary cultures are unknown, and the causewayed hill-top camps, still sometimes frequented during the Beaker phase, were definitely deserted. It looks as if hunting and pastoralism had gained in importance at the expense of agriculture. But the Wessex chieftains created political conditions favourable to trade and industry. Commerce brought supplies of copper, tin, gold, and amber. Scandinavian thick-butted axes and daggers of flint, occasional pins of Unétician type and beads of Egyptian fayence (Fig. 151). Native metallurgists developed the celt with cast flanges leading on to the palstav and the tanged spear-head which they

¹ Piggott, *PPS.*, IV, 60-90.

converted into a distinctively British type of socketed spear-head (Fig. 152).

Outside the Wessex province the Beaker culture lingered on in some areas like Derbyshire and Aberdeenshire, while generally in the Highland Zone megalithic and Peterborough elements reasserted themselves. The latter are represented by burials—inhumations or cremations—accompanied by Food Vessels, generally under round barrows, sometimes in little cemeteries.¹ In North-Eastern Britain, notably in Yorkshire, Food Vessels seem to be derived from the Peterborough bowls (Fig. 153, 2). But another series in Northern Ireland and

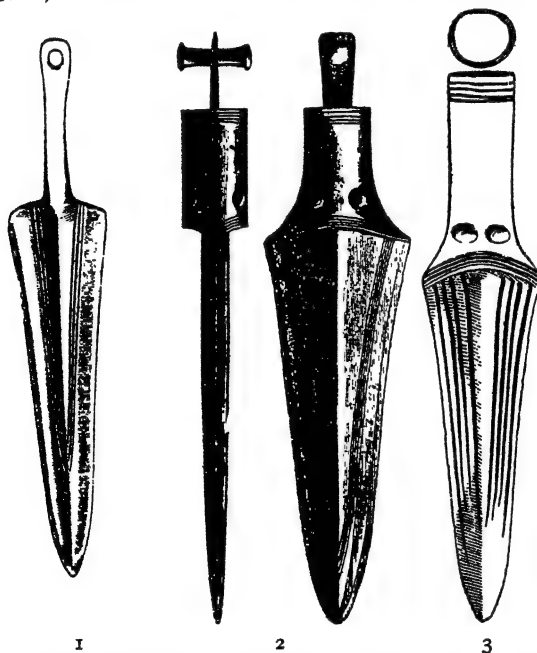


FIG. 152. Evolution of a socketed spear-head in Britain after Greenwell: 1, Hittelsham, Suffolk; 2, Snowhill, Glos.; 3, Arretton Down, Wilts. ($\frac{1}{2}$).

South-Western Scotland copies wooden vessels. Some of the products resemble the Pyrenæan polypod bowls of Fig. 139. Many are decorated with radial patterns on the base (Fig. 153, 1) like the Iberic bowls associated with Bell-beakers shown in Fig. 107, 2. Elements derived from the megalithic pottery of Northern Ireland can also be detected. Indeed Food Vessels

¹ Abercromby, *Bronze Age Pottery*, I; Childe, *Scotland*, 89.

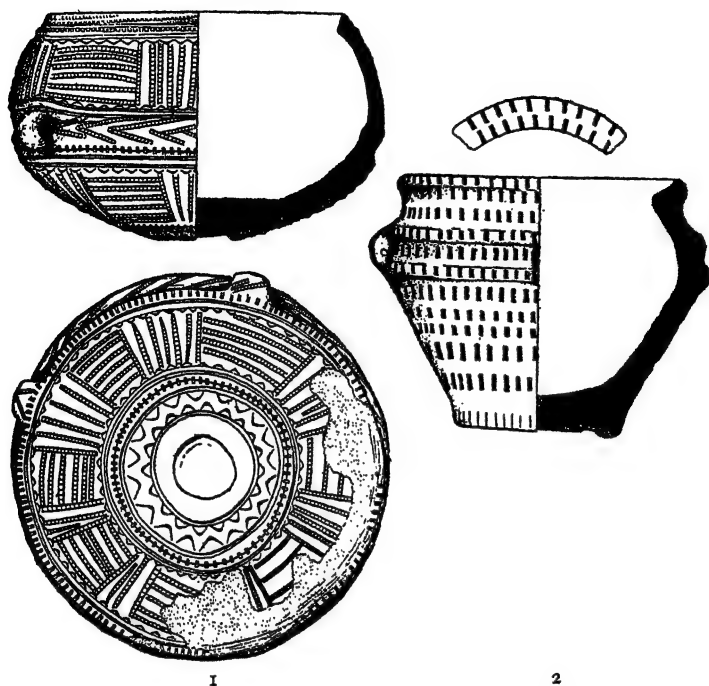


FIG. 153. Food Vessels, Argyll and East Lothian (3).

of this series recur, as stated, in some corbelled tombs of the Boyne type at Carrowkeel and elsewhere.

While there are no more settlements of the Food Vessel than of the Wessex culture, trade and industry developed. It was now that the Irish halberd reached the form that was exported to the North of Europe. The gold-smith, already expert in shaping and engraving sheets of hammered metal, was proceeding to work cast bars. Basket-shaped earrings (Fig. 154), exported also to Belgium and Poland,¹ occur with Beakers in Britain—only bronze copies with Food Vessels. Gold lunulae (Fig. 155) which were traded to North Germany, Brittany, and perhaps Portugal, may in the last resort be inspired by the collars worn by Egyptian nobles, but they may be immediately translations into sheet gold of the crescentic jet necklaces so common with



FIG. 154.
Gold earring (3).

¹ *Mat.*, 1885, 318; *Przeg A.*, II (1923), 168.

Food Vessels in Scotland,¹ just as in Wessex these were translated into amber.

The widespread diffusion of Britannico-Hibernian metal work and the variety of foreign products that reached the British Isles in exchange not only illustrate the leading rôle of the islands at the dawn of the Continental Bronze Age and the diverse influences blended in insular culture. They also provide a unique opportunity for correlating several chronological

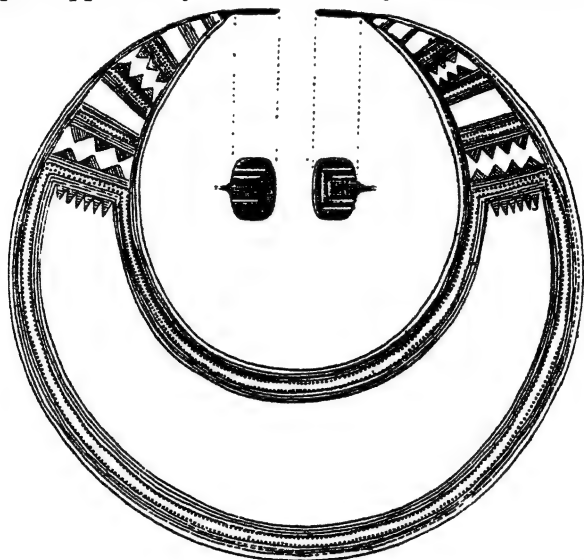


FIG. 155. Gold lunula, Eire. By permission of Trustees of British Museum.

sequences. The segmented beads, found as imports in Wessex graves (Fig. 151) point to a date round about 1400 B.C. for the burials in question. A gold-plated amber bead from a grave of the same culture narrows down the limits; for it is identical with an amber bead from a L.M.I tomb at Knossos.² Hence the Wessex phase should begin as early as 1500 B.C. Danubian and North European chronologies can be checked against this dating.

Bulb, trilobate, and crutch-headed pins of Unĕtician type³ like Figs. 59, 6, 8 and 9, from Wessex graves and an Irish gold ornament of the bar style⁴ and derivatives of Irish halberds in

¹ *PSAS.*, LXIII, 164; twelve have been found with Food Vessels, two with beakers.

² *Arch.*, LXV (1913-14), 42; cf. *PPS.*, IV, 70, No. 23; and *Am. Anthr.*, XXXIX (1937), 20, No. 10.

³ *PPS.*, IV, 85; *Am. Anthr.*, XXXIX, 10.

⁴ *Germania*, XXII (1938), 7-11.

Unětician graves and hoards establish a partial synchronism between Danubian period IV and the "early Middle Bronze Age" in Britain. Similarly, a double-axe bead of shale, imitating the Danish Passage Grave type, from a Wessex grave at Normanton and parallels to Passage Grave axes from contemporary East Anglian barrows¹ suggest that the same advanced phase of the British Bronze Age overlapped with part at least of the Northern Passage Grave period, Montelius' Neolithic III. But, if the Lyonesse transgression be really equivalent to the last transgression round the Baltic (p. 183), the earliest, B, Beakers must have arrived by the beginning of that period and so early in Danubian III. The previous megalithic phase in Britain must therefore coincide substantially with Danubian II. Correlations with the Iberian Peninsula follow. Segmented fayence beads establish a partial synchronism between the Argaric Bronze Age and the Wessex culture and so Danubian IVb. The preceding Danubian periods, IVa and IIIb, could be occupied, as in Britain, by the long Beaker phase. That would leave no room for a post-Beaker, Alcalá phase. Still hammer beads, as at Alcalá, recur in amber in Wessex graves; a cylinder-headed pin was found with a Food Vessel in Galway²; contemporary chalk "drums" from Folkton, Yorks, reproduce the lineaments of Iberian phalange idols as if the Copper Age in the Peninsula had lasted long enough to influence the British Isles in the early Middle Bronze Age.

Britain forms an exception to the principles of zoning which we have hitherto observed. Though lying at the extreme pole from the East Mediterranean foci of civilization, she outstripped in metallurgy and commerce such intervening regions as South France, Switzerland, and Southern Germany, to say nothing of the North. This superiority may be explained by the variety of cultural influences focused on the islands by reason of their geographical position and wealth in metal. The failure to advance farther towards urban civilization may be attributed to the exposure of the Lowland Zone to invasion by less progressive Continentals and the persistence in the Highland Zone of that pre-occupation with superstition everywhere associated with the megalithic cult.

¹ *Ant. J.*, XV (1935), 62.

² Childe, *PCBI.*, 125.

CHAPTER XIX

RETROSPECT

OUR survey of prehistoric Europe has disclosed a fragmentary mosaic of barbaric cultures—or rather several imperfect mosaics one on the top of the other. All are so incomplete that the pieces can be fitted to make different patterns. It is often doubtful to which mosaic an individual fragment belongs. By transposing pieces from one mosaic to another the patterns are radically altered and their whole significance is drastically changed. Four maps below illustrate the sort of patterns obtainable on one system of grouping the fragments. Other systems have been considered in the text. By transferring Northern and Western cultures here shown only on maps III and IV to maps I and II another picture would emerge involving a new interpretation of the relations between Orient and Occident. The pattern here adopted has frankly been determined as much by a subjective thesis as by the interdigitation of its component parts.

Concrete links have been traced between Hither Asia and the *Ægean* on the one hand and Western and Northern Europe on the other, along the Danube thoroughfare, over the great European plain and round the Western coasts. There is no doubt about the solidity of the links, but they are ambivalent. From Mesopotamia, Anatolia, and Crete to illiterate Scandinavia, Britain, and Spain the chains are unbreakable. But the component links are so loose that the lengths of the chains are variable at will. We are left in doubt how far they hang down into the timeless abyss of prehistory from their firm attachments in Oriental history.

In the several corridors and provinces surveyed we could recognize several periods, generally reducible to four. In each region these are well interlocked, but there is room for much play when different regions are compared. In the synchronistic tables that follow, the several columns can often be moved up and down freely and independently.

It is not till period IV that actual Egyptian manufactures and slavish copies of Asiatic ornaments prove beyond cavil the reception of Oriental influences in the Danube valley, in Spain

TABLE I

B.C.	TROAD	GREECE	MACEDONIA	BALKANS	UPPER DANUBIAN	MIDDLE BASIN	BLACK EARTH BELT	PONTIC STEPPES
	KUM TEPE		SESKLO					
	TROY I	EH I	DIMINI - VARDAR - MORAVA		DANUBIAN I	KÖRÖS		
	II	EH II		Bubanj I	LENGYEL	TISZA	TRIPOLYE O	MAIKOP
2100								
2000	III	EH III	EARLY MACEDONIAN	Bubanj II a	JORDANS-MÜHL		ARTUŞD Cucuteni I	YAMNO
1900				Bubanj II b	BEAKERS	BODROG-KERESZTÜR	Cucuteni II	
1800	IV		MIDDLE MACEDONIAN					
1700	V	MH		II c	UNĚTICE	PERJÁMOS	Usatova GLOB. AMPH.	CATACOMBS
1600		LH I	LATE MACEDONIAN					
1500	VI	LH II		Bubanj III	TUMULUS BRONZE AGE	PANNONIAN		
1400		LH IIIA	MYCENAEAN		LAUSITZ			SRUBNO
1300	VII a	LH IIIB						
1200	VII b	LH IIIC						

⑤ = SEGMENTED FAYENCE BEADS

TABLE II

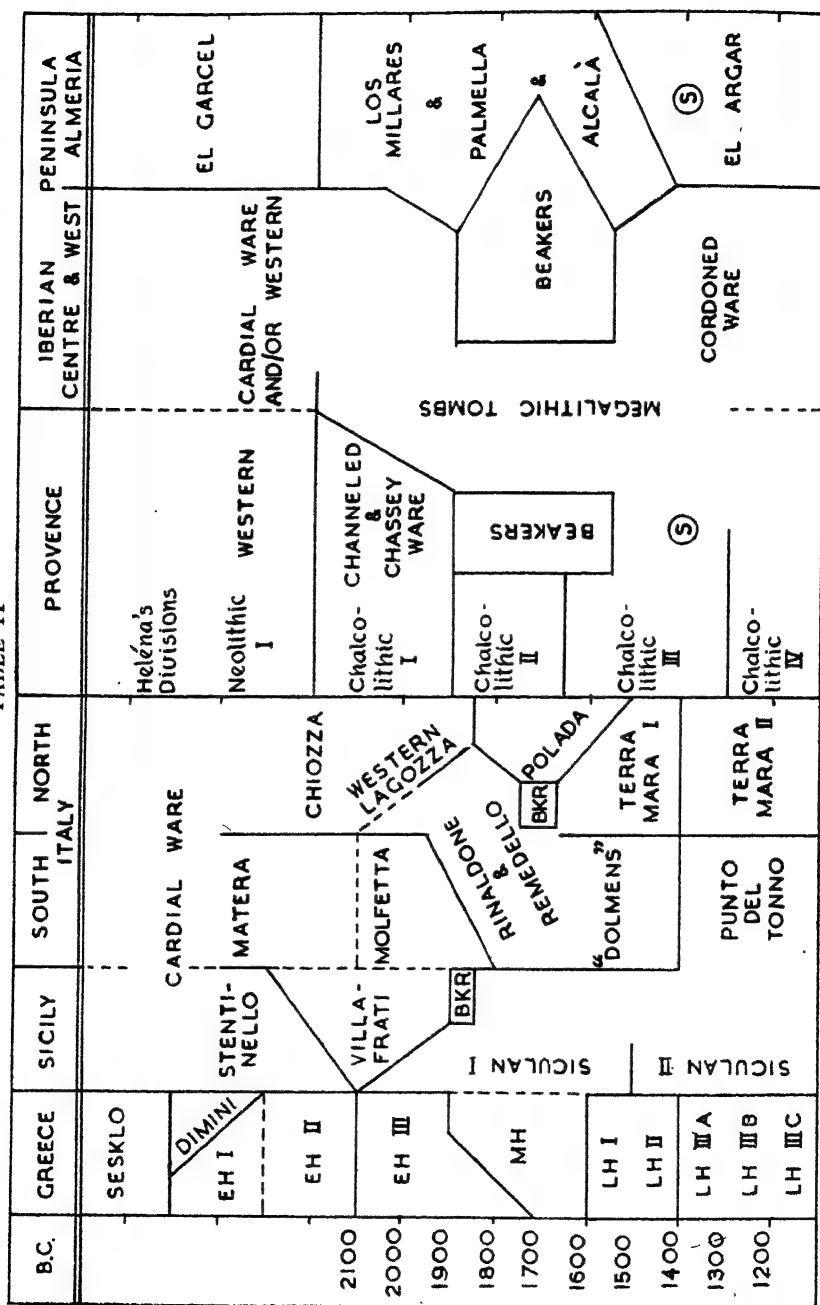
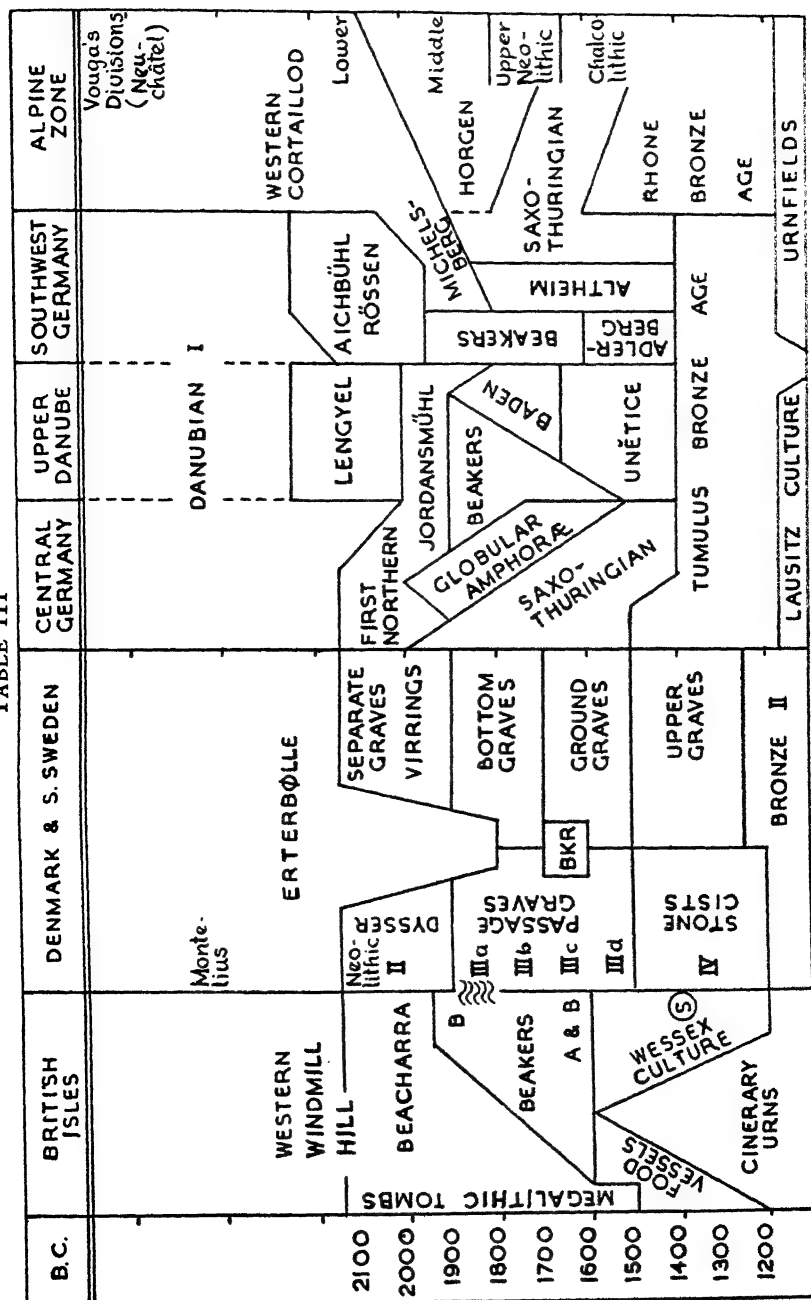


TABLE III



and Britain. There is no doubt that the segmented fayence beads from graves of that period in Hungary and England are of Egyptian manufacture. Their dating about 1400 B.C. depends, however, on a single grave-group and cannot therefore be accepted as final. The ornaments copied in Central Europe were fashionable in Asia for nearly two thousand years after 3000 B.C. Hence they give no precise *terminus post quem* for the Early Bronze Age in Europe.

We have here adopted the one documented date for the beads and correspondingly low dates for the bronze ornaments. Not only does such a chronology give a consistent pattern. Not only does it accord with *a priori* expectations. A survey based on it reveals a zoning of culture of quite the same sort as written history discloses in the second half of the first millennium B.C., and down to the collapse of Rome—indeed just the sort of zoning deduced from the diffusionist postulate itself. Moving from the metropolitan civilizations of Egypt, Babylonia, and the Hittite realm at the centre, our map IV discloses :

- (1) Fully-literate city-dwellers in peninsular and insular Greece ;
- (2) Illiterate townsmen in Macedonia and Sicily ;
- (3) Sedentary villagers with at least a specialized bronze industry and regular commerce to support it, in the Middle Danube basin, in South-East Spain and perhaps on the Kuban.
- (4) Less stable communities less highly differentiated, in the Upper Danube basin, Southern and Central Germany, Switzerland, England, and South Russia ;
- (5) Self-sufficing neolithic societies in Southern Scandinavia, Northern Germany, and Orkney ;
- (6) Groups barely emerging from savagery in the far northern forests.

Even by adopting a long chronology, i.e. by taking the maximal dates for the Oriental ornaments copied in period IV, this picture will not be seriously distorted. Egypt and Mesopotamia, but not Anatolia, retain their capital status. The Ægean world, and with it Sicily, descend one grade in the scale. Central Europe, South-East Spain, and Britain still

rank as Bronze Age, Scandinavia and Orkney remain neolithic. But South Russia loses grade.

But for earlier periods, the adoption of a long chronology has disconcerting results. The Vardar-Morava continuum must be interpreted as the result of a southward spread of Danubian culture; the Battle-axe cultures must start spontaneously in Central Europe or Denmark, and thence flood the Caucasus, Anatolia, and Greece. The spread of megalithic tombs must be reversed so that Minoan tholoi and even Egyptian mastabas become final elaborations of architectural forms created in the barbaric west or north. We are left in period I with neolithic Westerners and Danubians, certainly a stage or two below the contemporary Halafians of Hither Asia and Badarians in Egypt, but no longer connected therewith by recognizable intermediate stages.

The long chronology may be gratifying to the local patriotism of North Europeans. Assuming the identity of Battle-axe folk and Indo-Europeans, it relegates the Aryan cradle to the Baltic coasts or Central Germany. For this reason it is on the way to becoming a statutorily sanctioned dogma in Germany—and is suspect scientifically. But this long chronology and its consequences cannot be refuted by any single concrete fact. It is rejected here essentially on grounds of general probability.

Our short chronology preserves for the New Stone Age the same sort of pattern as prehistory (on any chronology), offers in the Bronze Age and history discloses from the second Iron Age. Our picture of period I differs from that of period IV in the same way as the latter picture differs from the earliest historical picture ten or twelve centuries later. We have the same sort of zones, but their radii are shorter. Moving from the centres of fully literate urban life in Egypt and Mesopotamia map I shows :

- (1) "Bronze Age" townships in Crete, Anatolia, and peninsular Greece.
- (2) Sedentary neolithic villagers in Thessaly, the Balkans, South-Eastern Sicily, and South-East Spain.
- (3) Semi-nomadic self-sufficing peasants on the Danubian löss lands and in Western Europe, including perhaps Southern England.

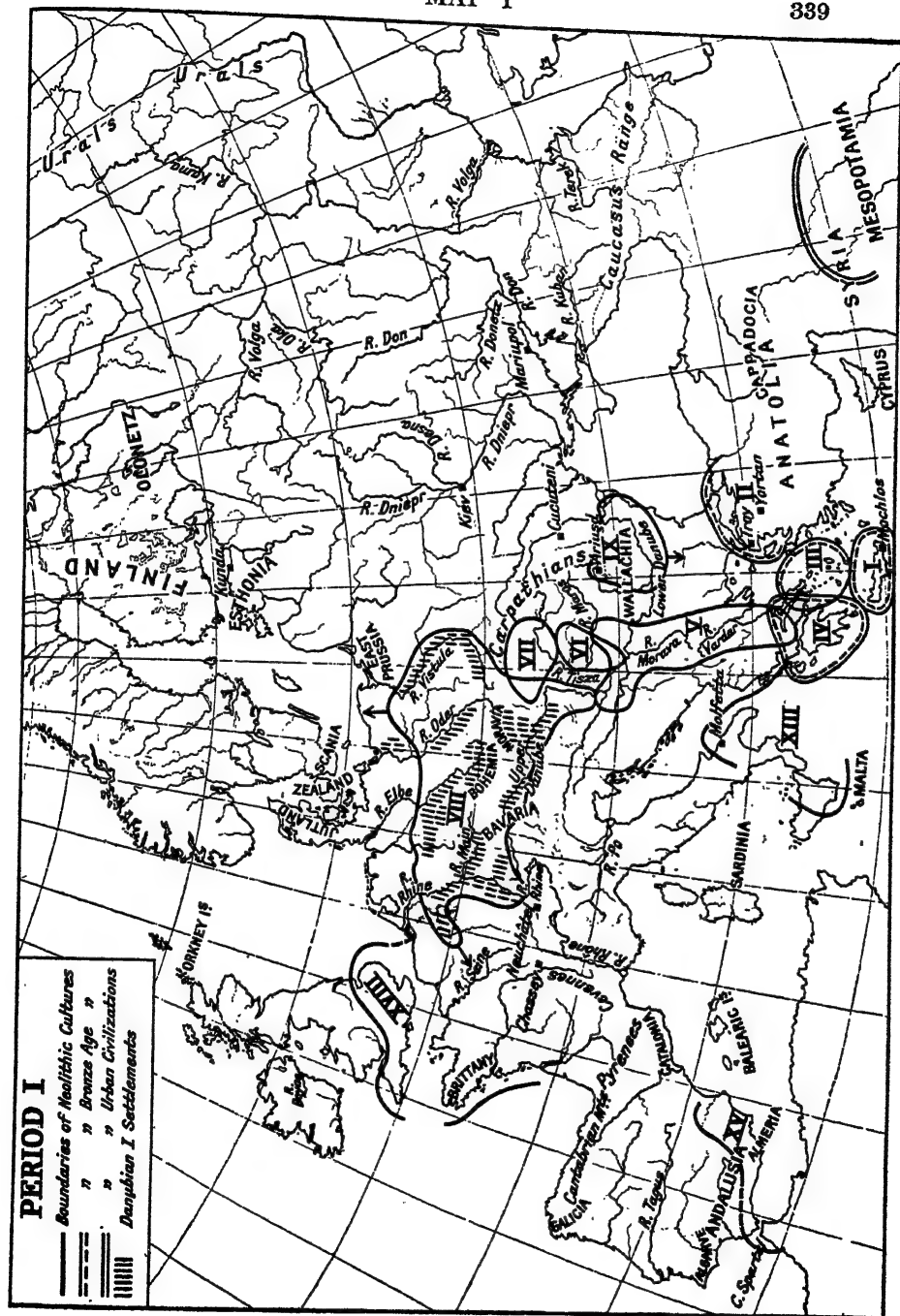
- (4) Only food-gatherers on the North European plain and in the northern forests.

Maps II and III then disclose the orderly expansion of these zones till the configuration, admittedly subsisting in period IV, be reached.

Is this latter picture really so unflattering to our ancestors? Had these attained a Bronze Age culture before 2500 B.C., the progress they made in the next two millennia compared with the achievements of Egyptians and Babylonians would seem quite insignificant. They would have to be judged backward, slow-witted barbarians. On the short chronology the creation, albeit not unaided, of a Bronze Age economy in fifteen hundred years, the ascent to the brilliant Celtic culture of La Tène in the next thousand would be respectable achievements.

Nor does the short chronology finally relegate the Aryan cradle to Asia. If any group, discoverable by archæological means, can lay claim to represent the ancestors of the Celts, the Teutons, Italici, Illyrians, and Slavs, it is the so-called Battle-axe culture.¹ It was traceable even in Greece and Macedonia shortly before the cultures that have some claim to the name Hellenic first emerge. But the Battle-axe cultures themselves might still originate in Jutland, in Central Europe, or in South Russia, or indeed at any and every point on the European plain where Forest folk came into collision with advancing peasant cultures. But the battle-axe itself seems older in Anatolia than in any more westerly region!

¹ Cf. Glob, *Aarbøger*, 1944, 214 ff.

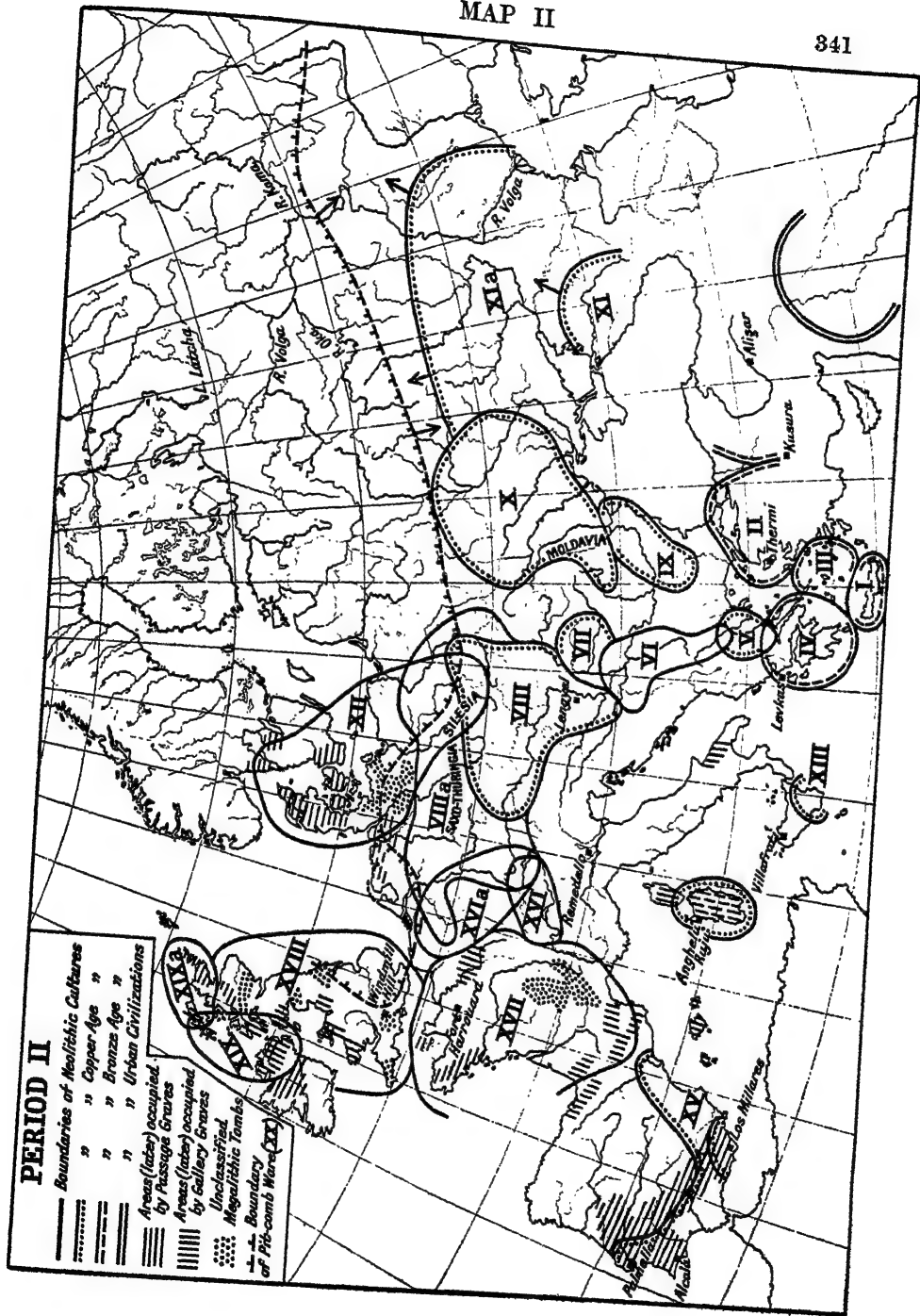


EXPLANATION OF MAP II

EUROPE IN PERIOD II

- I Early Minoan civilization.
- II West Anatolian culture.
- III Early Cycladic culture.
- IV Early Helladic culture.
- V Early Macedonian culture.
- VI Vardar-Morava complex.
- VII Tisza culture.
- VIII Danubian II culture.
- VIIIa Danubian I survivals.
- IX Gumelnița culture.
- X Tripolye culture.
- XI Kuban culture.
- XIa Steppe cultures (?).
- XII First Northern culture.
- XIII Siculan I culture.
- XV Los Millares culture and colonial extensions.
- XVI Cortaillod culture.
- XVIa Michelsberg culture.
- XVII Chassey culture.
- XVIII Windmill Hill culture.
- XIX Becharra culture.
- XIXa Unstan culture.
- XX Forest cultures with pit-comb ware.

In 1948 it was shown that the Early Macedonian culture (V) extends to interlock with that of Gumelnița (IX) as it is here shown interlocking with VI.



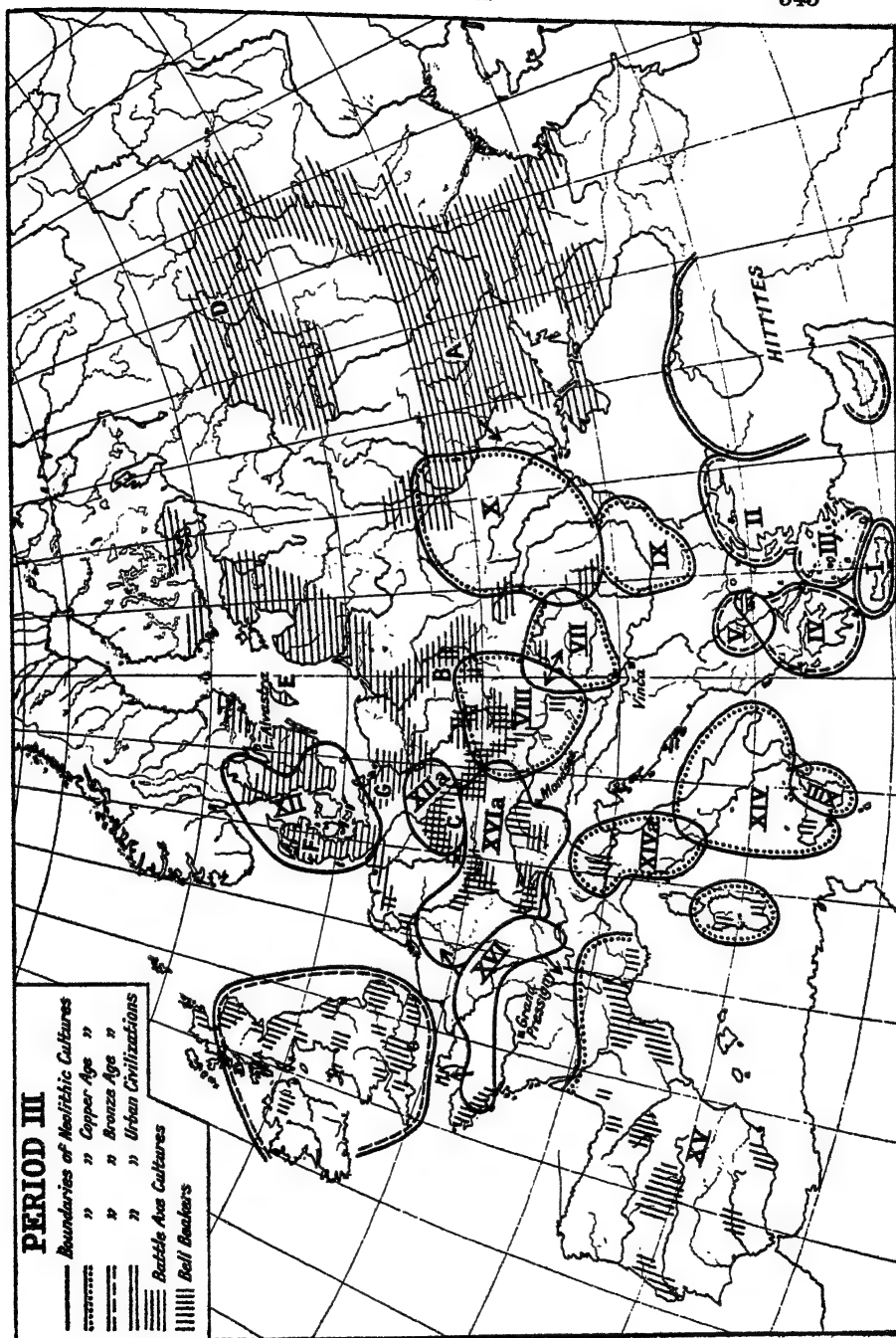
EXPLANATION OF MAP III

EUROPE IN PERIOD III

- I Minoan civilization.
- II West Anatolian culture.
- III Cycladic culture.
- IV Middle Helladic culture.
- V Middle Macedonian culture.
- VII Bodrogkeresztur culture.
- VIII Baden culture.
- IX Gumelnița culture.
- X Tripolye culture.
- XII Northern Megalithic culture.
- XIIa Walternienburg culture.
- XIII Siculan I culture.
- XIV South Italian Copper Age.
- XIVa Remedello culture.
- XV Los Millares—Palmella—Ciempozuelos.
- XVI Horgen culture.
- XVIa Michelsberg culture.
- XVIII Britannico-Hibernian Bronze Age culture.

BATTLE-AXE CULTURES

- A Pontic-Kuban.
- B Złota.
- C Saxo-Thuringian.
- D Fatyanovo.
- E Boat-axe.
- F Separate Grave.
- G Oder.



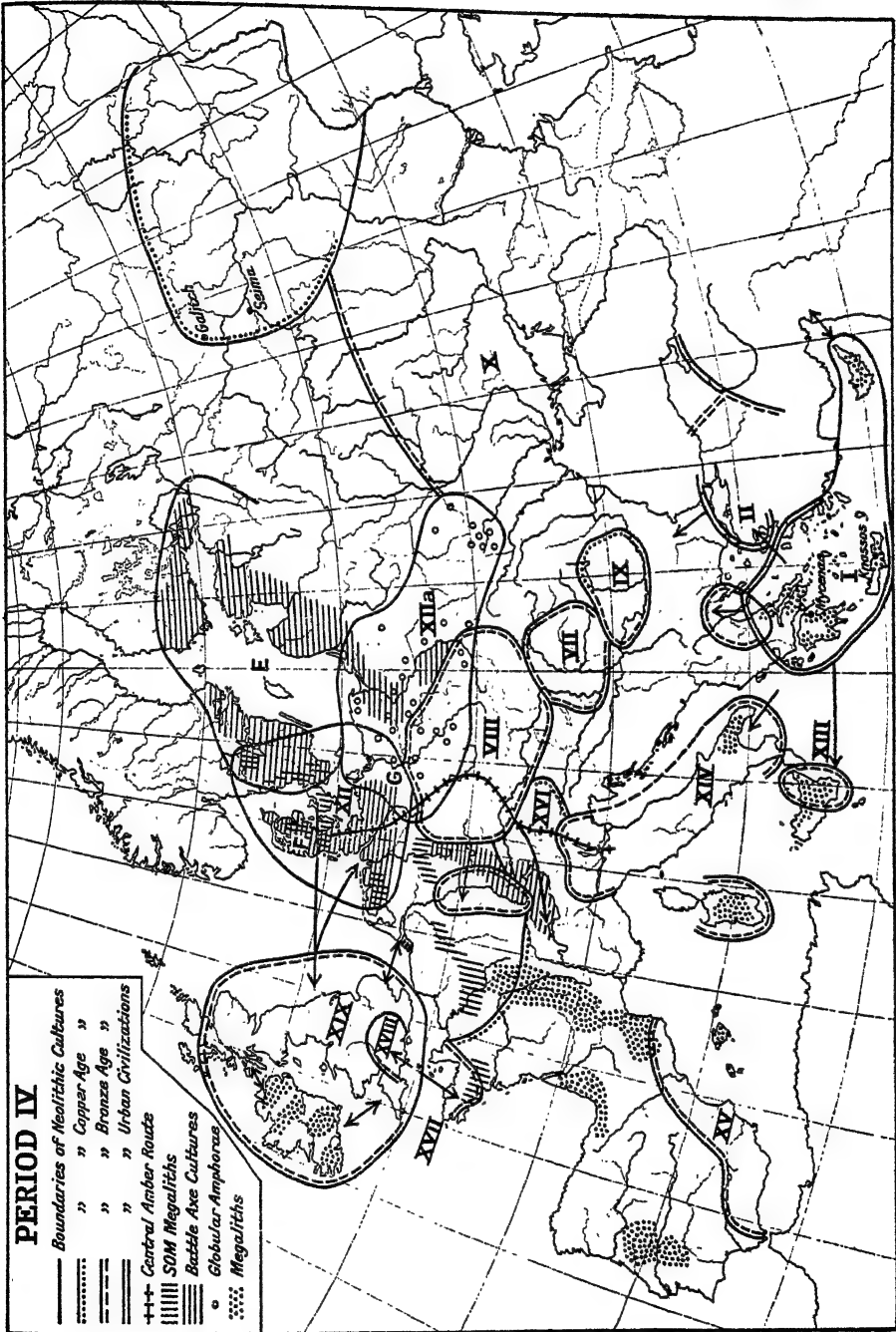
EXPLANATION OF MAP IV

EUROPE IN PERIOD IV *c.* 1400 B.C.

- I Minoan-Mycenæan civilization.
- II Civilization of Troy VI.
- VII Perjámos culture.
- VIII Unétician culture.
- IX Glina III culture.
- X Pontic Copper Age.
- XII Northern culture.
- XIIa Globular Amphoræ.
- XIII Siculan II culture.
- XIV Terremare and allied cultures.
- XV El Argar culture.
- XVI Mondsee-Altheim culture.
- XVII Armorican Bronze Age.
- XVIII Wessex culture.
- XIX Food-vessel culture.

BATTLE-AXE CULTURES

- E Boat-axe.
- F Separate Grave.
- G Oder.



NOTES ON TERMINOLOGY

Definitions of certain terms, descriptive of *ceramic decoration*, here used in a special or restricted sense.

Cardial—decorated with lines executed with a shell edge.

Channelled—with relatively wide and shallow incisions, round-bottomed.

Cordoned—with applied strips of clay in relief.

Crusted—with colours (paints) applied to the vase surface *after* the firing of the vessel.

Excised—with regular small triangular or square hollows made by depressing the surface or actually cut out ("fret-work" or "chip-carving" or "false relief").

Fluted—with flutings separated only by a sharp narrow ridge.

Grooved—with broad incisions, not normally round-bottomed.

Incrusted—with incised lines filled with white or coloured paste.

Maggot—with the impressions of a loop of whipped threads, see Fig. 150.

Particoloured—by firing the vessel so that part is reddened by the oxidization of the iron oxides exposed to a free access of air while part is blackened by the reduction of these oxides. (Egyptian black-topped ware is one variety.)

Rusticated—by roughening the surface, generally covered with a thick slip, by pinching with the fingers, brushing, etc. ("barbotine").

Rouletted—as described on p. 220.

Stab-and-drag—decorated with continuous lines formed by jabbing a pointed implement into the soft clay, then drawing the point backwards a short distance and stabbing it in again, and so on.

Celt, a term formerly used to describe chopping implements of stone or metal that could be used as axes, adzes, gouges, chisels, or even hoe-blades. Here we distinguish, where possible, between the several types and in particular describe as

Adze—a celt that is asymmetrical about its major axis so that it could not possibly be used as an axe (Fig. 29, D, B). When hafted the handle is perpendicular to the plane of the blade.

Axe—therefore describes a celt that is symmetrical about its major axis even though such a celt could often be used as an adze.

An axe (or adze) provided with a hole for the shaft, like a modern axe-head, is termed a *shaft-hole axe* (or adze), but, if the butt end is elongated and carefully shaped, the term *battle-axe* is conventionally used.

Burials should be described as *contracted* when the knees are drawn up towards the chin so as to make an angle of 90° or less with the spinal column. When the angle is more than a right angle, the term *flexed* should be used. Owing to ambiguities in the authorities followed, it has not been possible to maintain this distinction strictly here.

ABBREVIATIONS

PERIODICALS AND COLLECTIVE WORKS

"Aamosen"	"Stenalderbopladser i Aamosen," by T. Mathiassen, J. Troels-Smith, and M. Degerbøl, <i>Nordiske Fortidsminder</i> , iii, 3, Copenhagen, 1943.
<i>Aarbøger</i>	<i>Aarbøger for Nordisk Oldkyndighed og Historie</i> , Copenhagen.
<i>Acta Arch.</i>	<i>Acta Archæologica</i> , Copenhagen.
<i>Act. y. Mem.</i>	<i>Actas y Memorias de la Sociedad Española de Antropología, Etnografía y Preistoria</i> , Madrid.
AA	Ἀρχαιολογικὸν Δελτίον, Athens.
A.E.	<i>Archæologiai Ertesítő</i> , Buda-Pest (A Magyar Tudományos Akademia).
AfO.	<i>Archiv für Orientforschung</i> , Vienna.
AfA.	<i>Archiv für Anthropologie</i> , Brunswick.
Afas.	Association française pour l'avancement des Sciences (Reports of congresses).
AJA.	<i>American Journal of Archaeology</i> , Bryn Mawr (Archæological Institute of America).
Altschles.	<i>Altschlesien</i> , Breslau (Schlesische Altertumsverein).
Am. Anthr.	<i>American Anthropologist</i> (New Haven).
A.M.	<i>Mitteilungen des archäologischen Instituts des deutschen Reiches, athenische Abteilung</i> .
Antiquity	<i>Antiquity</i> , Gloucester.
Ant. J.	<i>Antiquaries' Journal</i> , London (Society of Antiquaries).
Anuari	<i>Anuari de l'Institut d'Estudis Catalans</i> , Barcelona.
Arch.	<i>Archæologia</i> , London (Society of Antiquaries).
Arch. Camb.	<i>Archæologia Cambrensis</i> , Cardiff.
Arch. Ert.	See A.E.
Arch. Hung.	<i>Archæologia Hungarica</i> , Buda-Pest.
Arch. J.	<i>Archæological Journal</i> , London (R. Archæological Institute).
Arberrättelse.	<i>K. Humanistiska Vetenskapssamfundets i Lund</i> .
A.P.L.	<i>Archivo de Prehistoria Levantina</i> , Valencia.
AsA.	<i>Anzeiger für schweizerische Altertumskunde</i> , Zurich.
AsAg.	<i>Archives suisses d'Anthropologie générale</i> , Geneva.
ASPRB.	American School of Prehistoric Research, <i>Bulletin</i> , Newhaven, Conn.
BCH.	<i>Bulletin de correspondance hellénique</i> .
Bl.f.d.V.	<i>Blätter für deutsche Vorgeschichte</i> , Königsberg.
Bol.R.Acad.Hist.	<i>Boletín de R. Academia de la Historia</i> , Madrid.
BP.	<i>Bullettino di paleologia italiana</i> , Parma, Roma.
BRGK.	<i>Bericht der römisch-germanischen Kommission des arch. Instituts des deutschen Reiches</i> , Frankfurt.

BSA.	<i>Annual of the British School at Athens.</i>
BSR.	<i>Papers of the British School at Rome.</i>
BSABruz.	<i>Bulletin et Mémoires de la Société d'Anthropologie de Bruxelles.</i>
BSAPar.	<i>Bulletin de la Société d'Anthropologie de Paris.</i>
BSPF.	<i>Bulletin de la Société préhistorique française, Paris.</i>
CIIA.	Institut international d'anthropologie, <i>Congrès.</i>
CIPP.	Comisión de investigaciones paleontológicas y prehistóricas, Madrid (Junta para Ampliación de estudios científicos).
CISPP.	Congrès international des sciences préhistoriques et protohistoriques.
Dacia	<i>Dacia : Recherches et Découvertes archéologiques en Roumanie, Bucuresti.</i>
Dolg.	<i>Dolgozatok a m. kir. Ferencz József-tudományegyetem archaeologiai intézetéből, Szeged.</i>
'Εφ. 'Αρχ.	'Εφημερίς 'Αρχαιολογική, Athens.
ESA.	<i>Eurasia septentrionalis antiqua, Helsinki.</i>
FM.	<i>Finski Museum, Helsinki.</i>
Fv.	<i>Fornvännen, Stockholm (K. Vitterhets, Historie och Antikvitets Akademien).</i>
Germania	Römisch-germanische Kommission des archäologischen Instituts des deutschen Reiches.
IPEK.	<i>Jahrbuch für prähistorische und ethnographische Kunst, Köln.</i>
IGAIMK.	<i>Izvestiya Gos. Akademiya Istorii Materialnoi Kultury, Leningrad-Moskva.</i>
Iraq.	<i>Iraq, London (British School of Archæology in Iraq).</i>
JHS.	<i>Journal of Hellenic Studies, London (Society for Promotion of Hellenic Studies).</i>
JNES.	<i>Journal of Near Eastern Studies, Oriental Institute, Chicago.</i>
JRAI.	<i>Journal of the Royal Anthropological Institute, London.</i>
JRSAI.	<i>Journal of the Royal Society of Antiquaries of Ireland, Dublin.</i>
JSEA.	Junta superior para excavaciones archeologicas, Madrid.
JST.	<i>Jahresschrift für die Vorgeschichte der sächsisch-thüringischen Länder, Halle.</i>
KS.	<i>Kratkie Soobshcheniya o dokladakh i polevykh issledovaniyakh Instituta Istorii Materialnoi Kultury, Moskva-Leningrad.</i>
LAAA.	<i>Annals of Archæology and Anthropology, Liverpool.</i>
MA.	<i>Monumenti Antichi, Rome (Accademia dei Lincei).</i>
MAGW.	<i>Mitteilungen der anthropologischen Gesellschaft in Wien.</i>
MAGZ.	<i>Mitteilungen der antiquarischen Gesellschaft in Zürich.</i>

<i>Man</i>	<i>Man</i> , London (Royal Anthropological Institute).
<i>Mannus</i>	<i>Mannus</i> , Berlin-Leipzig (Gesellschaft für deutsche Vorgeschichte).
<i>Mat.</i>	<i>Matériaux pour l'histoire primitive et naturelle de l'homme</i> , Paris.
<i>MDOG.</i>	<i>Mitteilungen</i> der deutschen Orient-Gesellschaft, Berlin.
<i>MSAN.</i>	<i>Mémoires</i> de la Société des Antiquaires du Nord, Copenhagen.
<i>MusJ.</i>	<i>Museum Journal</i> , Philadelphia (University of Pennsylvania Free Museum).
<i>Nbl.f.d.V.</i>	<i>Nachrichtenblatt für deutsche Vorzeit</i> , Leipzig.
<i>NNU.</i>	<i>Nachrichten aus Niedersächsens Urgeschichte</i> , Hannover.
<i>Not. Sc.</i>	<i>Notizie degli Scavi di Antichità</i> , Rome (Accademia dei Lincei).
<i>Obzor.</i>	<i>Obzor praehistorický</i> , Praha.
<i>OAP.</i>	<i>O Archaeologo Português</i> , Lisbon.
<i>OIC.</i>	Oriental Institute, University of Chicago (<i>Communications, Publications, or Studies in Oriental Civilization</i>).
<i>Oudh. Med.</i>	<i>Oudheidkundige Mededeelingen</i> uit 's Rijksmuseum van Oudheden te Leiden.
<i>P.A.</i>	<i>Památky archeologické a mistopisné</i> , Praha.
<i>PDAES.</i>	<i>Proceedings of the Devon Archæological Exploration Society</i> , Exeter.
<i>PGAIMK.</i>	<i>Problemy Istorii Mat. Kult.</i> , Leningrad.
<i>PPS.</i>	<i>Proceedings of the Prehistoric Society</i> , Cambridge.
<i>Préhist.</i>	<i>Préhistoire</i> , Paris.
<i>PRIA.</i>	<i>Proceedings of the Royal Irish Academy</i> , Dublin.
<i>PrzegA.</i>	<i>Przegląd Archeologiczny</i> , Poznan.
<i>PSAS.</i>	<i>Proceedings of the Society of Antiquaries of Scotland</i> , Edinburgh.
<i>PSEA.</i>	<i>Proceedings of the Prehistoric Society of East Anglia</i> , Ipswich (continued as <i>PPS.</i>).
<i>PZ.</i>	<i>Praehistorische Zeitschrift</i> , Berlin.
<i>RAZ.</i>	<i>Russ. Antropologicheskii Zhurnal</i> , Moskva.
<i>Rev. Anthr.</i>	<i>Révue Anthropologique</i> , Paris.
<i>Rev. Arch.</i>	<i>Révue Archéologique</i> , Paris.
<i>Rev. Ec. Anthr.</i>	<i>Révue de l'École d'Anthropologie de Paris</i> (continued <i>Rev. Anthr.</i>).
<i>REG.</i>	<i>Révue des Études grecques</i> , Paris.
<i>Real.</i>	<i>Reallexikon der Vorgeschichte</i> , edited by Max Ebert, Berlin.
<i>Rivista</i>	<i>Rivista di Antropologia</i> , Rome.
<i>RQS.</i>	<i>Révue des Questions scientifiques</i> , Bruxelles.
<i>SAC.</i>	<i>Sussex Archæological Collections</i> , Lewes.
<i>SGAIMK.</i>	<i>Soobshcheniya GAIMK.</i> , Leningrad.
<i>SM.</i>	<i>Suomen Museo</i> , Helsinki.

<i>SMYA.</i>	<i>Suomen Muinaismuistoyhdistyksen Aikakauskirja</i> = <i>Finska Fornminnesföreningens Tidskrift</i> , Helsinki.
<i>SA.</i>	<i>Sovietskaya Arkheologiya</i> , Moskva-Leningrad.
<i>Swiatowit</i>	<i>Swiatowit</i> , Warsaw.
<i>TGIM.</i>	<i>Trudy Gosudarstvennogo Istoricheskogo Muzeya</i> , Moskva.
<i>TSA.</i>	<i>Trudy Seksii Arkheologii RANION</i> , Moskva.
<i>UJA.</i>	<i>Ulster Journal of Archæology</i> (3rd ser.), Belfast.
<i>WA.</i>	<i>Wiadomości archeologiczne</i> , Warsaw.
<i>WPZ.</i>	<i>Wiener Prähistorische Zeitschrift</i> , Vienna.
<i>ZeE.</i>	<i>Zeitschrift für Ethnologie</i> , Berlin.

BOOKS

(Only books cited in more than one chapter are mentioned here)

- Åberg, N. *Bronzezeitliche und früheisenzeitliche Chronologie*, Stockholm, 1930-5.
- Arik, Remzi Oğuz. *Les Fouilles d'Alaca Höyük*, Ankara, 1937.
- Bagge and Kjellmark. *Stenåldersboplatserna vid Siretorp i Blekinge* (K. Vitterhets, Historie och Antikvitets Akademien), Stockholm, 1939.
- Bosch-Gimpera, P. *Etnologia de la Peninsula Ibérica*, Barcelona, 1932.
- Brøndsted, J. *Danmarks Oldtid*, Copenhagen, 1938-9.
- Brunton, G. *The Badarian Civilization*, London, 1928.
- Buttler, W. *Der donauländische und der westische Kulturkreis der jüngeren Steinzeit* (Handbuch der Urgeschichte Deutschlands, 2), Berlin, 1938.
- Castillo, Yurrita, A. del. *La Cultura del Vaso campaniforme*, Barcelona, 1928.
- Caton-Thompson, G. *The Desert Fayum*, London, 1935.
- Childe, V. G. *The Danube in Prehistory*, Oxford, 1929.
- *New Light on the Most Ancient East*, London, 1935.
- *Prehistoric Communities of the British Isles*, Edinburgh, 1940.
- Clark, G. *The Mesolithic Age in Britain*, Cambridge, 1932.
- *The Mesolithic Settlement of Northern Europe*, Cambridge, 1936.
- Coon, C. S. *The Races of Europe*, New York, 1939.
- Correia, V. *El Neolítico de Pavla*, Madrid, 1921 (*CIPP. Mem.* 27).
- Déchelette, J. *Manuel d'Archéologie préhistorique, celtique et gallo-romaine*, Paris, 1908-14.
- Engberg and Shipton. "The Chalcolithic Pottery of Megiddo," *Oriental Institute Studies*, 10, Chicago.
- Evans, Arthur. *The Palace of Minos at Knossos*, London, 1921-8.
- Forssander, J. E. *Die schwedische Bootaxiskultur*, Lund, 1933.
- *Der ostskandinavische Norden während der ältesten Metallzeit Europas*, Lund, 1936 (Skrifter av K. Humanistiska Vetenskapssamfundet, xxii).
- Frankfort, H. *Studies in the Early Pottery of the Near East*, London, 1925-7 (R. Anthropol. Institute, *Occasional Papers*, 6 and 8).
- Garrod, D. *The Stone Age of Mount Carmel*, I (Oxford, 1937).
- Giffen, A. E. van. *Die Bauart der Einzelgräber*, Leipzig, 1930 (Mannus-Bibliothek, 44).
- Hančar, F. *Urgeschichte Kaukasiens*, Vienna, 1937.
- Hawkes, C. F. C. *The Prehistoric Foundations of Europe*, London 1940.
- Heurtley, A. W. *Prehistoric Macedonia*, Cambridge, 1939.
- Laviosa-Zambotti, *Le più antiche Culture agricole Europee*, Milano, 1943.
- Loë, A. de. *La Belgique ancienne*, Brussels (Musées du Cinquantenaire), 1928.

- Nordmann, C. A. "The Megalithic Culture of Northern Europe," Helsinki, 1935 (*SMYA.*, XXXIX, 3).
- Osten, H. H. van der. *The Alishar Hüyük*, Chicago, 1929-1937 (Oriental Institute Publications, XIX-XX, XXVIII-XXX).
- Pendlebury, A. *The Archaeology of Crete*, London, 1939.
- Pericot y Garcia, L. *La Civilización megalítica Catalana*, Barcelona, 1925.
- Schaeffer, C. F. A. *Missions en Chypre*, Paris, 1936.
- Schmidt, E. *Excavations at Tépe Hissar, Damghan*, Philadelphia, 1937.
- Sprockhoff, G. *Die nordische Megalithkultur* (Handbuch der Urgeschichte Deutschlands, 3), Berlin, 1938.
- *Die Kulturen der jüngeren Steinzeit in der Mark Brandenburg* (Vorgeschichtliche Forschungen, I, 4), Berlin, 1926.
- Stocky, A. *La Bohème préhistorique*, Prague, 1929.
- Wace, A. J. B., and Thompson, M. *Prehistoric Thessaly*, Cambridge, 1912.
- Xanthudides, S. *The Vaulted Tombs of the Mesard*, Liverpool, 1924.

ADDENDA (1950)

- Böhm, J. *Kronika Objeveného Věku*, Praha, 1941.
- Kostrzewski, J. *Prehistoria Ziemi Polskiej*, Poznan, 1948.
- Leisner, G. & V., *Die Megalithgräber der iberischen Halbinsel, i., Der Süden*. (Römisch-germanische Forschungen, 17) Berlin, 1943.
- Schaeffer, C. F. A., *Stratigraphie comparée de l'Asie occidentale*, Oxford, 1948.
- Schmidt, R. R. *Die Burg Vučedol*, Zagreb, 1945.

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